



February 1999

Volume 67 No 2

Amateur Radio

Journal of the Wireless Institute of Australia



Full of the latest amateur radio news, information and technical articles, including...

- The John Moyle Field Day Competition
- Inductance Meter for Radio Coils
- HF-MT Dummy Load
- RF Low Pass Filters
- A 160 Metre Band Pass Filter
- The Car Battery as a Low Cost Power Source
- A Telescopic Mast for the Amateur on the Move

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Amateur Radio

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Editorial

Editor: Bill Rice* VK3ABP
Production Manager: Bob Harper VK4KNH
Snr Technical Editor: Peter Gibson VK3AZL
Technical Editors: Evan Jarman* VK3ANI
Gil Sones* VK3AUI
Don Graham VK6HK
Contributing Editors: Ron Fisher* VK3DM
Don Jackson* VK3DGB
WIA News Editor: David Thompson VK2NH

*Publications Committee member

Advertising

Mrs June Fox
WIA Federal Office
PO Box 2175 CAULFIELD JUNCTION VIC 3161
Tel: (03) 9528 5962 Fax: (03) 9523 8191
email amag@hotkey.net.au

Amateur Radio Correspondence

All correspondence, contributions and queries about the **content** should be sent to:

The Editor Amateur Radio
PO Box 2175
CAULFIELD JUNCTION VIC 3161
email amag@hotkey.net.au
Tel: (03) 9528 5962 Fax: (03) 9523 8191

Amateur Radio Delivery

All queries regarding delivery should be directed to:

Amateur Radio Federal Office
PO Box 2175 Caulfield Junction Vic 3161
Tel: (03) 9528 5962 Fax: (03) 9523 8191

Registered Office

10/229 Balaclava Road
Caulfield North VIC 3161
Tel: (03) 9528 5962 Fax: (03) 9523 8191
Business hours: 9.30am-3pm weekdays

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Our cover this month

Cover Photo by Peter VK5TZX. The photo, depicting the VK5ARC contest station, was taken at Willunga Hill during the VHF/UHF Field Day - 1995

Contributions to Amateur Radio

Amateur Radio is a forum for WIA members' amateur radio experiments, experiences opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for publication. Articles on disc or email are especially welcome. The WIA cannot be responsible for loss or damage to any material. A pamphlet, How to write for Amateur Radio is available from the Federal Office on receipt of a stamped self-addressed envelope.

Back Issues

Back issues are available directly from the WIA Federal Office (until stocks are exhausted, at \$4.00 each (including postage within Australia) to members.

Photostat copies

When back issues are no longer available, photocopies of articles are available to members at \$2.50 each (plus an additional \$2 for each additional issue in which the article appears).

Disclaimer

The opinions expressed in this publication do not necessarily reflect the official view of the WIA and the WIA cannot be held responsible for incorrect information published.

Amateur Radio Service

A radiocommunication service for the purpose of self-training, intercommunication and technical investigation carried out by amateurs; that is, by duly authorised persons interested in radio technique solely with a personal aim and without pecuniary interest.

Wireless Institute of Australia

The world's first and oldest
National Radio Society
Founded 1910

Representing
The Australian Amateur Radio Service

Member of the
International Amateur Radio Union

Registered Federal Office of the WIA

10229 Balacleva Road
Caulfield North VIC 3161
Tel: (03) 9528 5962
Fax: (03) 9523 8191
<http://www.wia.org.au>

All mail to
PO Box 2175 Caulfield Junction VIC 3161

Business hours: 9.30am-3pm weekdays

Acting Federal Secretary

Peter Naish VK2BPN

Federal Office staff

June Fox Bookkeeper
Rita Trebilco VK3IF Examinations Officer

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| | | |
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| Brenda Edmonds | VK3KT |
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| Peter Naish | VK2BPN |

EDITORS COMMENT

Positive Feedback AGAIN!

IN AMATEUR RADIO for November, 1988. I wrote an editorial entitled "Positive Feedback". I drew analogies between stock market trading, economic cycles, WIA funding and electronic circuits having gain and feedback.

When the feedback is positive any trend becomes amplified and increases until a limit is reached. At this stage the original trend may reverse and the system proceed as far as it can in the opposite direction.

I was reminded of this by our producer Bob Harper, who described the financial health of the WIA by the feedback analogy, in a note to us the other day. I quote from his description:

"A larger membership brings a larger print run that in turn brings greater advertising revenue. The

circle spirals and it is difficult to control but currently it is heading the wrong way. How can we change any of the above to increase rather than decrease? Ponder on that one a while. Perhaps some fodder for the next editorial Bill"

How can we change the system indeed? I suggested in 1988 that we would oscillate slowly between the two natural limits, in which all Australian amateurs belong to the WIA, or none belong. In this latter extreme the WIA disappears. There are people who have the power to change our direction. At present they are non-members. All they need to do is JOIN! As soon as our print run increases the trend will begin to reverse! Wouldn't that be marvellous?

Bill Rice VK3ABP

Editor

P.S. Thanks for the suggestion, Bob!

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Annual awards

Amateur Radio

The WIA Publications Committee at its January 1999 meeting decided the *Amateur Radio* awards for 1998.

They are:-

Technical Award for the best technical article in 1998 was awarded to PHIL RICE VK3BHR for his article SSB by the Fourth Method published in February.

Higginbotham Award for service to amateur radio was awarded to STEPHEN PALL VK2PS for his work in providing the monthly *How's DX* column throughout many years.

Both Stephen and Phil, to whom the editor professes not to be related to, will each receive an award cheque for \$100



Radiation Regulation

AS I PROMISED last month, you will find under WIANEWS in this issue of **AR** a summary of the most significant items that were discussed by the WIA during the meeting with ACA last December.

All these matters have a direct bearing on our activities as radio amateurs but, to my mind, the most important one is the forthcoming regulation concerning Electro-Magnetic Radiation (EMR).

It is expected that from early next year a provision to meet certain levels of performance in regard to harmful radiation will apply to all licensed transmitting devices, including those used by radio amateurs.

At present there is still debate as to what the safe levels are but it appears that recent work performed by the FCC in America will be taken into consideration.

The WIA is working closely with the ACA on your behalf to ensure that any mandatory provisions placed on our licences will be easy to understand and can be readily implemented without undue burden on licensees.

On the subject of WIA Policy in general, perhaps it is timely to remind ourselves that it is the seven WIA State Divisions who, through their Federal Councillors, ultimately determine national Policy.

Such matters are (or should be) the major agenda items at Federal Conventions. With so many topical issues, it is vital therefore that you support your Divisional Council in policy considerations so that WIA Federal can truly represent your interests nationally and internationally.

A strong WIA ultimately results in a secure amateur radio service.

Peter Naish, VK2BPN
WIA Federal President.



ACA Meeting Held in Canberra

An ACA Liaison Committee meeting was held in Canberra on 9 December 1998. A summary of that meeting is reprinted here in AR for your information.

Summary Of Main Issues

(1) 80 metre DX Window

ACA advised that a draft issues paper was in final stages of preparation. ACA wanted a positive outcome but would not be ready before March 1999.

(2) Possible LF Band

ACA were not opposed to the idea of such a new band but could not move at present because there was no provision in the Australian Spectrum Plan. The WIA was asked to use its IARU Region 3 membership and other ITU-related activities to encourage the adoption of LF spectrum for amateur use in this region. Meanwhile the existing arrangement for specific scientific permits would continue.

(3) Continuing usage by amateurs of bands subject to Spectrum Licensing

Much discussion took place on this matter without any significant short-term solution. The WIA was asked to make a submission to the forthcoming review of the Radio-Communications Act in regard to co-usage of Spectrum Licensed bands.

(4) Conversion of certain UHF and SHF bands to Primary usage by amateurs.

The WIA was asked to prepare a list of frequency bands which are presently allocated to amateurs on a secondary

ACA/WIA Meeting

Wednesday 9 December 1998 Level 2, Conference Room, Purple Building, Benjamin Offices

Attendees:

WIA

Peter Naish *President - WIA*
David Wardlaw *Member - WIA
ACA Liaison Committee*
Brenda Edmonds *Member - WIA
ACA Liaison Committee*
Richard Jenkins *Liaison Officer -
WIA ACA Liaison Committee*

Peter Stackpole *Executive Manager
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Peter Allen *CSG*
Alan Jordan *Compliance & Licensing*
Len Bray *Spectrum Planning*
Ray Wyeth *Compliance & Licensing*
Geoff McMillen *CSG*
Wayne Huxley *CSG*
Geoff Hartwig *Standards*
Ian Hayne *Spectrum Marketing*
Sue Bourke *CSG (minutes)*

ACA

Gill Kempton *(Chairperson)
Manager - Customer Access
Management Team*

basis and which were of most value to amateurs. The primary user would then have to be contacted by WIA as an initial step. ACA would monitor progress.

(5) Examination System

ACA reported that there was no change to the fundamental concept of devolution. However, a discussion paper was being prepared by ACA for release by March 1999. This would seek inputs from the WIA and other interested parties concerning participation in the exam system. The current arrangement with WIA would continue to operate for the time being.

(6) High Power permits

ACA is currently working on a variation clause to the amateur LCD for EME contacts (only). The arrangement would allow high power operation provided it met the new EMR provisions to come into effect next year.

(7) Call-signs not in accordance with established practice

ACA were continuing to abide by the practice of issuing call signs in accordance with the WIA's wishes. However, they acknowledged that there had been cases where this had not happened due to the automatic allocation of call signs by computer. ACA asked WIA to report such anomalies to them.

(8) HF gateways to VHF/UHF repeaters

ACA advised that as a matter of general policy such gateways would not be allowed where this would provide access to HF bands by amateurs not qualified for operation on those bands.

(9) Call book information

Subject only to the WIA entering into a specific arrangement with ACA to publish a list of callsigns, names and addresses, the information required by the WIA for production of an annual call book was freely available by purchasing the current CD-ROM of all Australian licensed stations.

(10) EMR provisions for amateur radio stations

This is likely to be the single most important change to amateur radio licences in the foreseeable future. The requirement to meet an EMR standard will apply to all amateur operations from January 2000. The actual requirements are still under discussion but would be modelled on the FCC documents. The WIA will work closely with ACA and also assist them in preparing a plain language statement that amateur licences could readily understand. The impact on amateur radio operations could be significant, especially for those stations using high power outputs in densely populated areas.

(11) The next meeting

The next meeting with ACA of the WIA Liaison Committee is scheduled for 23 April 1999.

Radio Communications Act (1992) Review Discussion Paper Released for Comment.

The paper has been released to stimulate discussion by all interested parties, including the WIA. Comments were to be returned by 8 February 1999.

It was only released just after Christmas so there has been less than a month to react and this has meant quite a lot of work by both Federal Councillors and coordinators in association with the ACA Liaison Committee.

By now the submission will have been lodged by the WIA. Further inputs to the Department of Communications, Information Technology and the Arts (DOCITA) will be provided over coming months.

Sydney 2000 Olympics

Q News tells us that the Sydney Olympic Broadcasting Organisation (SOBO) recently hosted a six-day briefing for more than 220 broadcasters from around the world.

They were shown the Grace Brothers Distribution Centre, adjacent to the Olympic Stadium that will become the largest International Broadcast Centre in Games history. Broadcasters will, together, produce more than 3200 hours of live video.

Morse Code Practice in New South Wales

VK2RCW, long known for continuous CW code transmissions on 3.699 MHz is back in action. Barry VK2AAB of the Hornsby and Districts Amateur Radio Club say that "signal reports from around VK & ZL would be appreciated". The transmission on 80 is a duplicate of the two metre sessions on 145.650 MHz.

Reports should be directed to
Barry VK2AAB or to the Hornsby & Districts Amateur Radio Club
PO Box 362 Hornsby NSW 2077.

New Operating Schedule for W1AW

The ARRL Maxim Memorial Station W1AW is now on a new operating schedule that reinstates morning code practice on four weekdays and expands weekday operating hours for visiting hams.

The new schedule reinstates one hour of code practice Tuesdays through Fridays at 9 AM, while discontinuing morning bulletin transmissions. This makes room to expand visitor operating hours on weekdays by three hours. The new visitor hours will be 10 AM until 4 PM, Monday through Friday.

The new schedule eliminates weekend code practice and bulletins, however. The demise of weekend hours also means an end to Saturday W1AW operation by visiting hams. The evening code practice and bulletin schedules remain almost unchanged, except that the final transmission of the day will be a code bulletin at 11 PM Eastern Time. The midnight digital and 12:45 AM voice bulletins will be discontinued. Please note that all time references are for the United States.

The complete new schedule appears in January 1999 *QST*, page 74 and on *ARRLWeb* at <http://www.arrl.org/w1aw.html>. Members may direct questions and comments about the new

schedule to WIAW, 225 Main St, Newington, CT 06111; e-mail wlaw@arrl.org.

Via ARRL Newsletter

ITU warns that CDMA-based RTT proposals for IMT-2000 could be excluded from further consideration if IPR stalemate is not resolved by the year-end

Discussions at the meeting of Task Group 8/1 held in Jersey, Channel Islands from 9 to 20 November 1998 indicated that the ITU may only be able to consider RTT technologies for IMT-2000 that are based on TDMA technology if the dispute surrounding Intellectual Property Rights of CDMA proposals is not resolved before the end of this year. "

This is clearly laid out in the procedure for submitting candidate Radio Transmissions Technologies (RTTs) described in an ITU Circular sent out to our membership on 26 May 1998(1)" said Robert Jones, Director of the ITU Radio-Communications Bureau.

The procedure was set out after consultation with over 200 industry experts who met in Geneva earlier in May.

"To conform with the ITU patent policy", Mr Jones explained, "the holder of any known patent or any pending patent application related to any proposal made to the ITU in the process of international standards-setting must submit a written statement, either waiving his rights or committing to negotiate licenses on a non-discriminatory basis and on reasonable terms and conditions. "Failure to provide this statement ultimately excludes the proposal from the international standards-setting process" Jones stressed.

The ITU patent policy is basically similar to that of most other standards-setting organisations so the proponents will face similar difficulties elsewhere if these issues are not resolved quickly.

The deadline for the submission of patent statements on IMT-2000 RTTs is set at 31 December 1998 in order to facilitate the consensus building phase of the ITU standards process and avoid

detailed development of standards which would ultimately be blocked from approval by IPR issues.

To date, two of the statements received are upholding IPRs on CDMA-based technology proposals: one by Ericsson on 28 September 1998 and one made by QUALCOMM on 13 October 1998.

The global telecommunications industry is at a critical juncture and the ITU believes that global competition based on IMT-2000 standards will be a key driver for the world wireless market; incompatible standards, sometimes softly referred to as "technology differentiation", can however only mean bad

CDMA-based RTT proposals for IMT-2000 could be excluded from further consideration if IPR stalemate is not resolved by the year-end

news for consumers through higher costs and lack of inter-operability across regions and around the world.

And this is precisely what would happen if the various TDMA and CDMA RTT proposals submitted to the ITU are not harmonised into a single global standard for 3G. About 80% of today's digital mobile market is TDMA-based.

A move to multiple 3G standards tied to today's 2G "footprints" could fragment the 3G marketplace. On the other hand, a global standard based on the best features of the various RTT proposals submitted to the ITU would mean a worldwide competitive platform for all players.

The ITU is concerned that the "virtual holy war" – to take the expression of ATT's Ken Woo – can well mark the end of a dream: the dream for consumers to have truly "anywhere, anytime" communication across networks, across frontiers, across technologies for personal access to Information Age services.

Given the glittering prize that third generation represents, it is now time to make sure this chance is not wasted and turn the "unfulfilled dream of the 20th century" into reality.

For operators and equipment manufacturers, a lot is riding on the choice of RTT. Incumbent operators have made huge investments in the networks deployed for second-generation systems. They clearly need to make sure that whatever decision is made on 3G, their existing 2G networks will remain interoperable with third generation systems under IMT-2000.

The consensus within Task Group 8/1 where all major industry players are taking an active part – including QUALCOMM and Ericsson – has therefore been to select a *radio interface* for IMT-2000 capable of delivering the full range of 3G services and quality in a global roaming environment, that could also operate with 2G networks through dual or multi-mode sets albeit without all the added functionalities of IMT-2000. In other words, a migration path similar to that experienced when colour television was introduced.

There is a growing consensus from all corners to develop a single global standard for third generation based around the ITU IMT-2000 concept. One of the last main remaining stumbling blocks is that of the IPR.

On the development of key characteristics of the IMT-2000 radio interfaces, the Jersey meeting achieved considerable progress. In particular, the Task Group 8/1 meeting, among other things:

- agreed that all 16 proposals for radio technologies (10 terrestrial and 6 satellite) qualified for the next phase, as well as;
- agreeing on a draft list of potential frequency bands for additional spectrum for IMT-2000. Although some spectrum was identified by the 1992 World Administrative Radio Conference for IMT-2000 and reviewed in 1995, additional spectrum is needed to cope with the increasing amount of broadband and increasingly interactive traffic of third generation systems. This will be addressed at the World Radio Conference in the year 2000.

Via International Telecommunication Union Release ITU/98-34 **ar**

The John Moyle Field Day Competition

by Bob Harper VK4KNH

Every year in March, Australia is host to the John Moyle Field Day Competition. In essence, normally sane people leave their comfortable homes and well-organised ham shacks for the fly infested, dusty/muddy turmoil of the wild wilderness.

Once there, they erect the best antenna system that a roll of wire can provide, connect their expensive black box radios to an unregulated generator and pull the starter cord.

For the next twenty-four hours they will talk to anybody, anywhere, on as many frequencies as possible, as long as they haven't spoken to them too recently. Then, when totally exhausted, they pack up and go home; it's great!

John Moyle, VK2JU (sk)

Amateur Radio Operator, Engineer, Musician, Journalist, Editor, et.al. John Moyle was certainly an active person. John was born at Malvern in Victoria in 1908 and even at an early age was regarded as an active person.

The then Principal of Scotch College, Dr.W.S.(Bill) Littlejohn, noted in John's testimonial: "The list of offices which he holds in the school shows that he is a lad of high ability and of exceptional energy. — He has earned the thanks of the school for his excellent work as Editor of the 'Scotch Collegian'."

John worked at Radio 3DB in the early 30's and wrote many short stories and technical articles before joining the staff of "Wireless Weekly" in 1932. He began by answering technical queries before becoming the assistant technical editor and then technical editor.

In April 1939 "Wireless Weekly" split into two magazines with John following the more technical "Radio & Hobbies" as the Technical Editor, becoming the Editor a few months later. He held that position until he died in March 1960.

In 1941 he temporarily dropped editorial duties and joined the RAAF where he rose to the rank of Squadron Leader. He was put in charge of all

RAAF RADAR publications that were being written at the Melbourne Headquarters. Some of the publications, training guides and manuals, continued to be used into the 1960s.

John was well regarded in the science of recording, both on disk and briefly on tape as the then new technology emerged. He spent many hours experimenting with valve amplifiers trying to attain the highest standard in high fidelity reproduction. John was a foundation member of the Sydney Recorded Music Society where he was renowned as the man who demonstrated stereo sound, hailed at that time as the finest ever heard in Australia.

In 1948 John and his staff experimented with VHF Mobile Radiotelephone being the first publication in Australia to have "Radio Cars". The same basic system was still in use by the Sydney Sun Newspaper in the 1960s.

Licensed as an Amateur Operator in 1932, John devoted a great deal of time to the WIA, both in the New South Wales Division as their President and the Federal WIA as the VK2 Federal Councillor. He represented amateurs on the 1959 Australian delegation to the then Administrative Radio Conference in Geneva, Switzerland.

As an avid VHF experimenter, John is well remembered by the older serving Amateurs but is perhaps known to the younger among us by the annual John Moyle Field Day Competition. If you have the opportunity this year, please join in with the large number of Australian Amateurs who celebrate the memory of John by partaking in this event.

History

I'm not sure if the John Moyle Field day has been an annual event since 1961, as I think it to be, but it has certainly been around since I began Amateur Radio in the late 70s. Indeed it was one of my first outings with the Ipswich Radio Club and has remained as an annual social event throughout many changes of address since that time.

I have seen some very casual approaches and some others organised with almost military precision. I've been on winning teams and many less successful teams and in every case the



Photo 1: George Embry (was VK4AGE) at VK4WIP Station around 1980

participants have recounted their experiences for many months and even years afterwards. As I recall it, one station was congratulated by many operators one year for the great signal they generated on 160m. It seems that they simply used what they found in the paddock; including an out-of-service MF Radio mast and an extensive groundplane.

Every year you will hear voices that you probably haven't heard since the previous year. You will renew old acquaintances and make many new ones.

Historically it is a weekend where as many of us as possible take to the hills and set up in paddocks, gullies and on hilltops or even on mountaintops. The aim is to be prepared to set up your station in quick time in a strange location and be ready to handle traffic. What better practice is there for handling emergencies such as natural disasters.

Traditionally the station is operated over a twenty-four hour period with all contacts logged and weighted.

The Competition

I don't intend to go into depth on the rules, as they will be in February AR in the Contest Column. You must sit down with your fellow team mates and pick the rules apart yourself. My suggestion is to get a copy of past rules sheets from old February editions of AR and look at what changes there have been over the years.

Search for the results that are generally printed in AR a few months later and look at the scores in the various sections. Is there a section that you feel you could have performed better in than the teams that won?

Do you feel that there is an advantage in hitting a specific section that had few contestants last year? Do you have another advantage such as the perfect VHF position overlooking a large population and some very impressive VHF equipment? Pick your section and prepare specifically for it.

Location and Layout

Location, location, location is the real estate agent's motto. It has to be yours as well. It is no use planning to make camp on a small mountaintop for great VHF coverage if you want to put up a lot of HF gear as well. Similarly a large open salty pan might be great for those HF



Photo 2: Graham Rayner VK4GDR operating 'tailboard portable.'

verticals but too low for any VHF bands.

If VHF is your first choice then work the distance rule. By moving a few kilometres further away from town you can double your score due to the distance multipliers, as long as you can get people on to the simplex frequencies. I am sure there are many for which it would be their first simplex contact, on any frequency!

Remember that many members of your club may not want to travel. There is not much use in the competition committee selecting a prime location only to find that most of the members wouldn't travel that far. You might have to be content with the local park just to get the numbers you require.

If your members intend bringing spouses then make sure that they will be comfortable as well. Again it's hard to concentrate on the bands when you are being reminded that it's time to go to Auntie Mary's party.

Housing

Field Day weekends bring out the most ingenious amongst us. While most stations will be operated from within tents, there will also be those that operate from caravans and vehicles. (Care to test run the local SES Communications Van for them?)

These are all valid options but I am not sure whether some of my experiences would be considered as within the spirit of the competition. I have been with stations operated from within park pavilions, public rest areas and from a

tarp stretched from one wall of a public toilet.

The rules allow you to make use of any facilities that you find within the area you have chosen, but the spirit of the competition is to house yourself in something that you brought onto the site yourself.

You will need tents or such to house stations for each band. It may be that you can house many operating positions from the same tent but beware of the noise level, interference between transmitters and spacing for the antennas.

Separate tents may be the best option if you have sufficient operators and assistants.

You should also prepare an area for cooking, eating and perhaps even sleeping, not to mention some form of toilet facility.

When you consider housing you should also look at how many operating tables and chairs you will require.

Tools

I am often fascinated to see the most organised people of commerce and industry finding themselves lost in the bush. Usually they simply forget or rather did not consider the tools they may require. A short list, but one that should suffice would include the following: A basic Electronics, Electrical and Mechanical Toolbox, Soldering Iron/Station, Mattock, Axe, Sledge Hammer and last but not most importantly a Shovel!

You should also bring an antenna

launcher and a compass. The antenna launcher and compass will be dealt with later but the shovel is for the antenna bases, digging the latrine, levelling the generator and lifting damper and baked spuds from the fire and filling in the latrine. Be sure to get the order right, right!!

The driest of grounds will be surprisingly water resistant in a sudden downpour, which any John Moyle veteran will tell you is always on the cards. It will flow through your tent and then soak in around your feet, so be prepared to dig a shallow drainage trench around your tent to divert it away. This is where the Mattock comes in handy.

The other tools are generally for insurance, if you have them you probably won't need them! (Murphy et al.)

Portable Station

If we start off the discussion by saying that almost any radio will do, there will be some that want to argue about specific qualities of each brand and model. I simply don't care, unless you want to buy a radio specifically for the competition.

I think that portable operation is best achieved with low voltage equipment. Many modern radios are rated for twelve-volt operation with the added bonus that they will accept a wide variation in that voltage and even overcome fairly high noise levels.

A couple of car batteries or a single, high-capacity truck battery will operate for many hours with few problems. Power can be

maintained by charging that battery continuously or by rotating batteries.

Other than that, remember that the more complex a radio is the longer it will take another operator to learn to use it. Simple, common controls are a sign of a good radio for field operations.

Each radio should have an antenna tuner even if it will be operated into a 50-ohm antenna. The tuner provides an added level of filtering to help avoid interference with nearby stations on harmonically related bands.

As an additional precaution, low-pass or band-pass filters may be constructed

and used but be sure that the band of operation is clearly marked on the filter. The small losses due to the filters will be overcome by the hours of interference free (reduced?) operation.

Wherever possible, antennas should be designed for a single band. Broadband antennas such as the G5RV, while a great portable antenna for broadband/multiband operation, are more likely to allow harmonics to be transmitted and received.

On the higher bands, from twenty metres up, beams are the best option. Some might also use a dipole or vertical "sniffer" for searching for the next beam direction or frequency. On lower bands use a mix of horizontal and vertical antennas to help "decouple" them or place dipoles so their lobes are at right angles to each other.

A portable mast can be a length of pipe, an old TV antenna mast or a suitable tree. Rotation is often considered as much more difficult with the tree however!

Pipes and other masts can be supported by guy wires or even rope which has been well inspected and tested. The usual method of rotation is known as the Armstrong method – simply go outside and turn the pipe by hand. Make sure the base is on something solid or it will drill itself into the ground.

Every year you will hear voices that you probably haven't heard since the previous year. You will renew old acquaintances and make many new ones

Remember to bring plenty of cable, both coaxial cable and antenna wire. Every field day I have attended has required some minor alteration or construction. We even made all of the antennas for one event after realising that the antenna box was three hours drive away. Moral, double-check everything before leaving home – Murphy is watching.

Make sure that you have a good headset, Morse key if you use one, a suitable clock and all of the leads and plug in bits for the radios. Galvanised toolboxes, that are so common now, make

a great "Kit Box" to keep all of the regular bits in.

A tape recorder comes in handy, just let it run on record continuously just in case you miss some detail from a station who no longer answers you.

Use the best lighting that you can manage but test and check any fluorescent lighting in a portable environment before you commit to using it. Inverters can themselves be noisy but often play havoc with radio receivers and transmitters alike. I like the old gas camping lamp myself, and it's adjustable as well.

If you are going to use computers, then again test them with the station in a portable situation operating the radio on all bands before you decide to take them along. If there is a problem, try using ferrite traps on all of the leads entering the computer. The same goes for many modern electronic devices especially including digital clocks.

Personnel

We once sat down with some other operators and made a list of the jobs required on what we considered would be a well-prepared John Moyle Field Day team. Even though only a team with a rich benefactor could support all of the job positions we came up with, most of the following tasks have to be done by somebody.

The Operators

Preferably there should be several operators for each band with some acting as assistants (spotters) to others. We even considered supporting the operators with scribes but for most of our outings we couldn't even support all of the bands.

Power Supply Operator

One soul should have the responsibility of keeping the power supply up to the operators. That might entail fuelling the generators, charging batteries or simply keeping the noise from the generators to a minimum.

Housing/Furnishing Officer

One poor soul to coordinate the supply, delivery and erection of a suitable number of tents, tables and chairs.

Canteen/Catering Officer

Napoleon once wrote, "An army marches on its stomach." and he hadn't even seen

hams on the go. If the operators have to stop to make dinner for themselves then contacts will be lost. Now personally I don't take it that seriously, as a quick look at my stomach will verify, but it is true that the operators can be more effective if well catered for.

Contest Secretary/ Logkeeper

One person must be responsible for knowing the rules inside out and back to front. They should also be responsible for ensuring that all of the paperwork is done and that the logs are checked, copied neatly and sent off in time.

Equipment Manager

A list of equipment must be generated, equipment found and details recorded. Equipment must be tested where necessary, and then transported to the site. As I have said earlier, there is not much glory in finding that a necessary piece of equipment is a three-hour drive away.

First Aid Officer

We have been lucky on many occasions to have a trained Ambulance officer with us who we thankfully didn't need to bother. There will probably be a trained First Aider amongst your crew. Find out who they are and make sure that you have a first aid kit on site.

Publicity Officer

Every organisation today needs to have a good PR officer, one who can get the local media as well as businesses on side. Perhaps the "Holden Marquee" is available for the weekend and the manager can see an advertising possibility or the local Hiring Firm will work a deal, special weekend rate, on an industrial generator for you.

Certainly it would be of benefit to you to have prospective members come along to help out as free labour, perhaps as the cook. I have had three senior scouts on one outing working their behinds off. I understand that at least one has a call sign now.

Coach/Captain/Strategist

Every team needs a "Gee-up" occasionally. A leader who can stir an extra effort at the right time or one who is in a position to see the whole picture and can perhaps make decisions about strategy. When to turn the beam, change bands, modes or whatever.

Tour Guides!

If you are lucky you might get interested onlookers. They will peer in and wonder what strange people we are. If one person is able to explain what you are up to, what you hope to achieve and what the funny sounds are, you will have promoted AR and removed some of the mystique from the visitors' minds. You might even score some new members. Do you have a banner for your group and could you put up a display board explaining what you do?

Catering

I can remember one event when we ran out of coffee before it got dark. Apparently everybody thought they'd be drinking something from a bottle. On another occasion it turned so cold that we made soup from chopped up sandwiches to keep warm. The moral of the story is to come prepared for any eventuality.

Bring plenty of makings for both hot and cold drinks whether that's coffee, tea, cocoa or cordial. You'll need plenty of plain water and some fire and ice. Oh, and don't forget the milk and sugar.

When it gets cold there's nothing like a hot mug of soup and as well as the Cup-of-soup style, a couple of cans are easy to carry and prepare and you can water it down to suit the numbers. We once made a stew out of an army ration pack using virtually everything in it. It was gratefully received even by the ex-army type who supplied the makings. "You couldn't get food like this in the army" he stated as he chewed down on it.

For cold food; sandwiches, fruit, biscuits and cakes are all well received. Other munchies such as crisps, chocolates and nuts can also provide that much-needed snack.

The main needs of the kitchen are a place to eat, somewhere cold such as an Esky and somewhere to heat things up such as a barbecue or fire.

Promotion

"It's only our recreation, why promote it?" I have heard such comments so many times from so many amateurs. They seem to believe that we should leave everything as it is and all will be well. The truth is that membership numbers in the amateur fraternity are in

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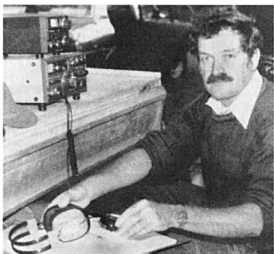


Photo 3: Dave Gay VK4DJG – operating JMFD station at Dalveen around 1990

decline. You can help change that by enjoying your hobby more and introducing it to others.

Every time you do something with your club, look at how you can use that event to promote your club and amateur radio as a whole. The public basically hasn't heard of us. Believe it or not!

Let the papers know what you're doing. They won't react unless you tell them how it would benefit their readers. So tell them that you and your club are entering a national competition that helps amateurs prepare for communications duties during a natural disaster. Give example such as Cyclone Tracy where amateur radio was the first on air after the established communications were flattened. Amateur Radio gave the first communications from Mexico City after the earthquake shut down all of the commercial systems and networks.

Use the **5WH** rule; also known as "**what, where, when, who, how and why**".

Tell them that the competition involves communicating with amateurs all over the world. The competition helps advertise Australia as a tourist destination. If you have previously been successful at winning a section then say so. Show the reporter your certificate and say that you are defending it against strong interstate competition.

Invite the papers/TV/radio to attend, to capture some sounds off air and to take some pictures. If they can't attend then that's fine; offer to take down the story

details they require, get some pictures for them and ask what else they might need.

If it is a local paper they will almost always want photos of people who are either well known or have a lot of relations in the area with clear captions of who is in the photo, what they are doing and who they are talking to. Make it friendly and easy to follow.

Suggest a small piece before the event announcing who you are, what the event is, where and when it is on and why

the public is invited to come and see the action.

After the event, follow up with the photos that you promised. Make sure that they are processed on the next business day and given that same day to the reporter with the details of the event. Most importantly, leave a contact name and number.

If any of the participants attend a local school make sure that they are photographed with mike in hand and then give the story to the school newspaper. That is where you will find tomorrow's hams. While you are at it, provide a copy to any professional or other bodies you belong to for their magazines; Scouts, Institute of Engineers, Teachers Journal etc. Many bodies like to show their members "at play".

Finally make sure that some photographs are given or sent to your local club, the WIA for "Amateur Radio" and your local WIA Divisional News.

Safety

It would be nice to think that our hobby is perfectly safe but in reality there are always risks. As a safety officer I have learned that many people simply ignore the risks and hope that accidents won't happen. I find that the best medicine is to know the risks and take the precautions necessary.

Let's look at the simple risks first and consider what to pack into the first aid box. You were going to take one weren't you?

Bites

You will encounter insects and as such you should take insect repellent, stings (or similar) and have some ice handy. Now for the nasty ones -spiders, centipedes and snakes bite when cornered. Have the right bandages on hand and learn what to do if bitten. I won't try to cover it here and there is plenty written about the right treatments. The best plan is know that you are in their territory and avoid them. Do any of your members have an allergy to bee stings and if so how do they react?

The sun will hopefully be out but even if it is not, a day under thin cloud can be just as bad. Take hats and skin factor 15+ lotion with you. Again keep some ice handy in case of heat stroke.

For minor burns, scalds, cuts, abrasions and such have some bandaids, bandages and antiseptic handy. Also keep a stretch bandage for sprains and strains and, you guessed it, have some ice handy. Do you notice that ice is a very practical item?

Masts

Temporary masts may tend to be too temporary. Avoid placing tents within the likely range of any falling mast. Remember that the good old gum tree occasionally sheds huge branches as well. Either could well be silent killers if they drop in your direction. Remember also that masts in the bush can be attractive lightning points. If a major storm builds up you must ensure that you are safe even if it means tossing the cable out of the tent until the storm passes.

Electricity

Generators are fairly safe if used correctly, although I have known of two neighbours who were shocked and killed when trying to move a generator while it was running. Follow the instructions and note the precautions for setting up. Never refuel a generator while it is running. There is too great a risk of sparks from electrical ignition or the exhaust that could ignite the petrol fumes.

RF Burns were quite a risk when I first started doing field days as many antenna tuners were in open boxes or on a flat board and adjustments were made by moving an alligator clip along the coil. I bet there are still some in common use out there.

Paper Warfare

As the sign in the gents says, "The job isn't finished until the paperwork is done." You will need a log of the contacts made and a summary or cover sheet. Log sheets can be printed up cheaply or made on a friendly photocopier.

It is always better to have more than you need than to run out. You can use one of the computer contest log programs if you trust it but it isn't essential. If possible though have all of the cover sheet and contact details typed into a text file to make the contest manager's job easier.

The cover sheet identifies the team, callsign and equipment used, the operator's names and callsigns that took part and the points claimed for each band.

It should have a statement signed by

a representative of the team stating that both the rules and the spirit of the competition were observed.

A word from experience here, get the cover sheet filled out and signed by the operators on the contest day or be prepared to chase each and every one of them later.

You will also need pens, pencils and other basic stationery including "doodle" paper. Have some clipboards available and other items such as tape and string.

We put together a folder with a collection of "shack-side" data.

In it we included the rules, band plans, Q-codes and the phonetic alphabet, world time zones, AR zones, Australian map and local area map for VHF distances, Maidenhead tables, IPS data from the latest AR magazine, some phrases in

Japanese and a list of club operators that might be attending.

Every year is different, yet every year is a ton of fun. You'll go home tired and perhaps even sore but by simply participating you will have already won. You may have to wait a few months to learn how well you did but you'll be listed there with those who you spoke with some for the first time, many for the first time in a long time.

I challenge you to go out, find a team and do it. I wish you a lot of luck, lots of contacts and know that you'll have a lot of fun in the process.

Don't forget the camera and notebook – I expect to hear all of the great stories and see some great pictures.

Cheers for now, Bob Harper VK4KNH

Reference – details of John Moyle's life were taken from an obituary published in AR in April 1960 – authors anonymous.

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Rescued by a rat

"Amateur Radio to the Rescue once again."

During the QNEWS callbacks on Sunday Morning (24th January) in Townsville, Dave Chandler VK4NN reported that the 2metre **VK4RAT** voice repeater had been put to good use earlier that morning.

VK4NN takes up the story....

We have been enjoying some quite good spells of weather out here at Magnetic Island although the fish aren't biting as well as they should.

Saturday Afternoon whilst at Florence Bay we were overflowed by helicopter RESCUE 521 who advised us that there were some tourists overdue in a hire dinghy.

Being the responsible mariners we are, we agreed to look out for them during the evening whilst we proceeded to anchorage at Jeffries Bay.

At around 5am on Sunday morning we spotted the two tourists on the rocks with their dinghy fully swamped.

Unfortunately the coastline was too

rocky for us to approach so we attempted to raise the local Coast Guard on the Marine HF, with no success.

So we put out an emergency call on the VK4RAT VHF Voice Repeater and were answered nearly straight away by Les Steel VK4ALS (the TARC WICEN Coordinator).

Les knew all the right buttons to press and informed the local police who then attended and got the tourists to safety and medical attention.

We were able to get a line around the swamped dinghy, Dave VK4NN said, and pull it out into open water to prevent it from floating away and becoming a navigation hazard.



We want to pass on our thanks to Les VK4ALS for the fantastic way he responded to our call!!

Gavin Reibelt, QNEWS Townsville re-broadcaster, reported that during the call-backs they were able to confirm this happening with Les VK4ALS who was listening to QNEWS in between scheduling ambulances and medivacs in the Townsville region.

It goes to show that anyone with a radio should 'expect the unexpected'. (ESPECIALLY WHEN TUNED TO "THE RAT" VK4RAT.)

Submitted by QNEWS from
TOWNSVILLE VK4ZZ

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Test Equipment

An Inductance Meter for Radio Coils

Drew Diamond VK3XU

45 Gatters Road
Wonga Park Vic 3115

For our purposes, the measurement of ordinary values of resistance and capacitance is quite straightforward. Inductance is a bit more involved. Various methods have been detailed in this and other journals in recent years, but the difficulty for many experimenters is in obtaining a sufficient number of accurate inductance "standards" to calibrate a direct-reading meter.

THE MULTI-FUNCTION multimeters with an inductance range generally turn out to be useless for micro and nanoHenry measurement. The intrepid radio worker can apply a dip meter to the job, depending on coil type, but if the coil is enclosed in a can, or otherwise inaccessible, or out of the dipper's range, then we're pretty much stumped.

If the idea of performing a simple calculation is not a bother, and you have access to a calibrated signal source that can output 1 milliwatt or more, then this little gadget may be just the thing. Measuring range is from less than 50 nanohenries to at least 200 microhenries (depending on the generator's output power), which should cover just about

any tuning coil used in the MF, HF, VHF and lower UHF regions. If desired, another simple calculation allows us to make a pretty good estimate of a coil's Q factor.

Circuit

The variable frequency signal from the generator is applied to a 56 ohm terminating resistor, where a 1 pF capacitor couples the voltage thus obtained to the Lx measuring terminals. A 47 pF NPO or silver mica capacitor in combination with strays establishes a "known" of nominally 50 pF at the terminals.

With an unknown inductor connected, the generator is adjusted to the parallel resonant frequency of the 50 pF and coil

combination. Signal voltage will then be at maximum across the terminals. A second 1 pF capacitor couples a sample of the signal voltage to a two-diode detector, thus producing a DC potential across the 100 k sensitivity pot, where an appropriate value is picked off and applied to the op-amp.

A LM-386 is wired here as a DC, or servo amplifier. Circuitry inside the LM-386 sets the gain, and establishes the quiescent (no-signal) DC output at pin 5 to half supply voltage, in this instance +4.5 V. A voltage divider comprised of a 33 k resistor from +9 V, 10 k trim pot and another 33 k to chassis produces a voltage of about +4.5 V at the slider of the trim pot. The 100 microamp meter is connected in what is virtually a bridge arrangement.

Now, the relatively small positive DC detected signal voltage applied to the (+) input of the LM-386 is amplified, causing the DC output at pin 5 to move in a more positive direction, thus unbalancing the bridge and proportionately driving the meter. Current drawn from the 9 V, "transistor" battery is about 5 mA.

Construction

The die-cast box shown measures 122 x 66 x 41 (mm) L x W x H. An ordinary aluminium or plastic box with a metal panel should also serve.

To obtain minimum stray inductance, the "earthly" Lx terminal must connect direct to chassis, with the hot terminal

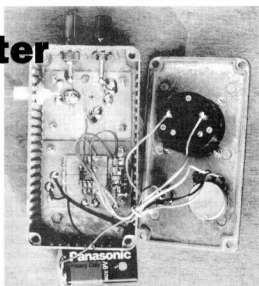
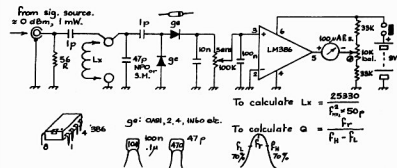


Photo 1: Inside View



Inductance Meter for Radio Coils

—VK3XU—

Figure 1

spaced 20 mm from it. The 47 pF capacitor should be soldered between the "hot" Lx terminal and chassis with leads as short as practicable. The 56 ohm resistor, 1 pF capacitors, germanium diodes and 10 nF capacitor should also have reasonably short leads.

A small rectangle of plain printed circuit board may be used to accommodate the components (I used two small boards, but one would be easier). Use direct wiring for all circuit parts between the 56 ohm resistor and 10 nF capacitor.

The LM-386 may be mounted "dead-bug", or, preferably, "paddyboard" style (see *Reference 4*). The 10 k balance trim-pot does not need frequent attention, but a small screwdriver adjust hole should be provided in the box.

If you prefer to use a 1 mA meter, substitute 3.3 k resistors for the 33 k ones, and 1 k or 500 R for the 10 k trim-pot.

Operation

Before applying power, check your wiring, paying close attention to polarised components. Set the sensitivity potentiometer to minimum and balance potentiometer to mid travel. With no

signal connected, switch on. Adjust the balance potentiometer for zero deflection on the meter.

Rotation of the sensitivity potentiometer should not cause a significant deflection (you may see one or two needle-widths deflection, however, which is not a problem). Now set the sensitivity potentiometer near maximum.

A typical measuring set-up is pictured. The generator delivers a nominal 1 mW signal, which is applied via 50-ohm coax to the signal input of the meter. Connect your coil to the Lx terminals. Sweep the generator frequency until you see the meter needle flick upwards, then carefully peak the reading. Note the frequency. Inductance in microhenries is calculated by:

If you want to estimate the Q factor of the coil, first obtain a full-scale (100 %) reading as described above. Note the frequency (f_{res}), then alter the frequency upwards until the reading is 70 %, note the frequency (f_{high}), then tune downwards past resonance to 70 % on the low side, and note the frequency (f_{low}). Q factor is estimated by

$$Q = f_{res} / (f_{high} - f_{low})$$

The frequency resolution of the dial must be very good for Q measurement; otherwise, connect a frequency counter to the generator's output.

It would be a good plan to type these formulas onto a card or sticker, and fix it to the bottom of the box for easy reference.

Things get a bit tricky where the coil runs into the hundreds of microhenries and larger. The problem is twofold. Self (or "winding") capacitance of typical coils starts to become significant, and secondly, we find that a fairly large generator signal is required as we get into the millihenries.

A signal generator such as the HP 606 will deliver up to 100 mW, and may allow us to obtain a reading, but the accuracy cannot be relied upon because of the self-capacitance. This can be "swamped" to some extent by connecting an additional (say) 150 pF across the coil, thus making the total resonating capacitance 200 pF.

With a bit of application and practice, radio coils of all kinds can be measured with confidence and reasonable accuracy, from an oscillator coil in a broadcast set, to a hairpin loop for a 432 MHz amplifier.

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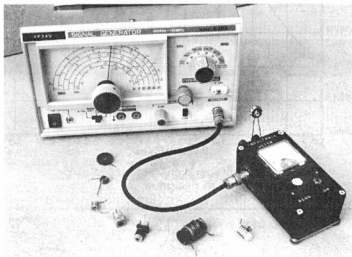


Photo 2: Measuring set-up

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3. Second Thoughts on Radio Theory, Scroggie, Iliffe Books.
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A 160 Metre Bandpass Filter

Keith Gooley VK5OQ
Lot 15 Tenafeate Ct
One Tree Hill SA 5114

If you need a filter for 160 metres to remove interference from AM broadcast signals and other signals above the band, this is it. The response plot shows 60 dB attenuation for broadcast band signals at 1650 kHz and on the high side a similar attenuation is provided at 2.05 MHz and above. The filter can also be scaled to operate on any range of frequencies in the HF and low VHF band provided the same percentage bandwidth is acceptable.

THE FILTER IS a 0.5 dB Chebyshev design with a bandwidth of 60 kHz. The 0.5 dB refers to the passband ripple; chosen to give steeper skirts than if the response had zero ripple in the passband. The termination impedances are 50 ohms resistive although the response will not change much if the terminations depart from the design values within reasonable limits.

The response plot was taken from a computer simulation of the filter using the ARRL's Radio Designer software. The actual response of the completed filter followed the simulation remarkably closely.

Construction

The filter should be built in some kind of metal box to achieve the out-of-band rejection afforded by the design. Copper clad fibreglass PCB blank could be used instead. The three coils should be shielded from one another and the shields should be kept away from the coil a distance equal to the coil diameter otherwise the Q of the coil will be degraded. The coils are wound on 25 mm OD PVC tube and if the specified wire is used (25 SWG), the coil Q will be about 190. This will result in the filter having a passband attenuation of about 11 dB rather than the 5 dB shown in the plot. The lower attenuation (5dB) was due to a higher Q value obtained by

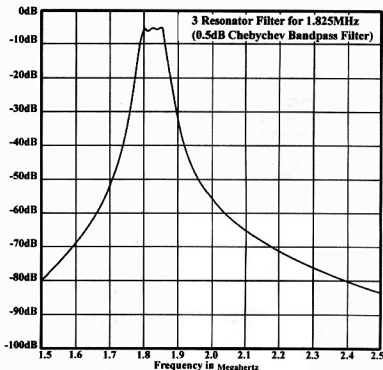


Figure 1. the passband characteristics of the Chebyshev filter as designed

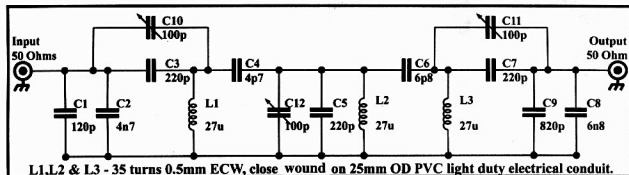


Figure 2. Circuit of the Chebyshev filter

using Litz wire instead of the solid enamelled copper.

Litz Wire

For those not familiar with Litz wire, it is a multi-stranded wire with the strands individually insulated. I used 40/44 (40 strands of 44 gauge wire). All the strands are soldered together at each end of the coil but the fact that they are insulated from each other means that the RF resistance is much lower than a solid wire of the same diameter due to skin effect. The coils wound with this wire had a Q of 300. It was quite a surprise to see the decrease in passband attenuation resulting from the higher Q. So if you can get hold of some Litz wire a better filter will be made.

Capacitors of 220 pF and below should be NPO ceramic or silvered mica (not common these days) while those above this value should be polystyrene or greencaps. Don't use ceramic for these, as they will be too lossy. For the trimmers I used mica compression types but ceramic types could be used as well. Jaycar has recently introduced a 100 pF ceramic trimmer (cat # RV-5722) which would be fine. The commonly available little round ceramic trimmers could be

used although the max capacity of the brown ones is only 50 or 60 pF and the 220 pF components (C3, C5 and C7) may have to be increased to compensate.

Design Values of Capacitors

| | |
|----------|---------|
| C1 + C2 | 4944 pF |
| C3 + C10 | 296 pF |
| C4 | 5.0 pF |
| C5 + C12 | 274 pF |
| C6 | 6.8 pF |
| C7 + C11 | 289 pF |
| C8 + C9 | 7727 pF |

Scaling to other frequencies

The design centre frequency of this filter was 1825 kHz. If it is desired to build a filter centred on another frequency f (kHz), multiply the inductance by 1825 and divide by f . Similarly multiply the capacitances by 1825 and divide by f . The bandwidth will be changed in direct proportion to the frequency. That is the new bandwidth will be $60\text{xf}/1825$. The bandwidth can be increased by increasing C4 and C6 and vice versa. The overall shape will suffer if this process is taken too far however.

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A Telescopic Mast For The Amateur On The Move

Graham B. Jackson

VK3GBJ

Upper Beaconsfield, Vic

Recently my wife and I went on a 10 day field trip into the Pilbara region of Western Australia; I was determined to work HF on the trip, particularly to make contacts with friends back in Melbourne. The biggest problem was how to get that piece of wire to stay up in the air – particularly as the Pilbara is not over endowed with tall trees over which one might sling a wire.

ALSO THERE WAS a tight limit on the gear I could take and whatever I took had to be able to stand a fair bit of knocking around. I would not have the opportunity to even see the expedition vehicles let alone add any fittings to them, prior to the expedition's departure from Karratha.

Single wire antenna

I was striving to put together the smallest portable HF station I could manage. My choice was an ALINCO DX70, an MFJ – 971 ATU and a single wire antenna. Great – but as I said – how to get that piece of wire to stand up. Aluminium tubing, whilst light weight and easy to assemble, suffered from the disadvantage that any rough treatment would dent, bend or buckle the tubing beyond repair.

My mind turned to the possibility of using fibreglass fishing rod blanks. However when I inquired at a supplier of fishing gear, I was told such rod blanks were no longer readily available as it was cheaper to buy an imported rod – complete with all the trimmings – for less than the cost of the pieces needed to assemble a rod yourself. They did have telescopic fishing rods for those who combined bush walking with trout fishing but they were nowhere near long enough – even in the Pilbara I could find trees taller than that.

Playing with a Giant Squid

As I was leaving the purveyor of fishing tackle my eye was taken by a piece of black tubing, which later proved to be only 1120 mm (44 inches) long and 35 mm (slightly over 1 inch) in diameter. It carried a label which announced that it was a "21' GIANT SQUID POLE". This certainly warranted further investigation, and so, with the approval of the aforesaid purveyor of fishing tackle, we proceeded to "have a play".

A surprising pole

The pole turned out to be quite a surprise – it consisted of 7 tubular elements, including the outer case, which easily and smoothly extended out to a pole some 6 metres. (19 ft 6 in) in length. It was surprisingly light – 650 gram (1 lb 7 oz) and surprisingly stiff. This was looking very interesting, particularly as the material of construction was very resilient and would clearly withstand quite a degree of rough handling without buckling, distorting or denting.

Each of the sections was tapered over its length so that as each section was pulled out to its limit the bottom of the section "jammed" in the top of the next section, which then proceeded to extend, and so on until the pole was fully extended. The "jamming" was sufficient to make the mast self-supporting yet easily "un-jammed" when returning the pole to its collapsed state.

With some trepidation I inquired the price and was told \$30.00 – at that point I decided the GIANT SQUID POLE warranted smuggling into the shack for further testing.

Experiments with the pole and a wire some 17 ft long feeding the DX-70 via the ATU gave commendable results on 20 metres, including contacts with UK, Japan, USA. etc. Things were looking good, so the next move was to visit the suppliers of this interesting piece of plastic – Jarvis Walker of fishing rod fame – who manufacture the pole in their factory in Malaysia.

Their Sales Manager – Darren Round – was an interested listener as I told him of what I proposed to do with his GIANT SQUID POLE, however he was reluctant to divulge any details as to the manufacturing process that produced these thin wall tapered tubes. I was advised that Jarvis Walker have been manufacturing

tapered fishing rods for many years and had developed techniques they were not prepared to divulge.

Investigating the tubes

I am still keen to learn how these lovely tapered tubes are made, so if anyone has any bright ideas do let me know! Darren was also not forthcoming on the material of construction, although it is clearly a fibre reinforced product, but I doubt the reinforcing is fibre glass.

I was hoping Darren would be able to provide a small scrap piece of tubing for testing in a microwave oven, but unfortunately no small pieces were available. Why not cut a bit off one section? Well that is not as simple as it sounds. Remember the bottom of each section is so sized that it jams within the top of the next section, whilst the bottom of the outer case section has a closure tightly fitted. Any amputation of a section would render the whole pole useless by causing the jamming of the section to fail.

Portable

The expedition to the Pilbara went well and the pole stood up to the abuse of being thrown in with all the other gear in a 4-wheel drive for 10 days. The method of use was to extend the pole with one end of the wire tied to the tip with a piece of string, and then lash the base of the pole to the bull bar of the 4-wheel drive.

The top section of the pole is flexible like the end of a fishing rod – in fact it is the end of a fishing rod! A piece of cord was tied near the lower end of the wire and this was then tied to the bull bar to maintain some tension on the wire against the spring of the rod tip. The wire antenna was connected to the ATU and worked against the vehicle.

The antenna pole proved highly satisfactory – for those able to add one or two well thought out fittings to their vehicle, using the pole would be made even easier. We tried taking photos showing the pole in use however the proportions made it difficult to come up with anything meaningful. A photo showing the pole extended was taken so far away it lost detail, whilst a close up shows just a length of black tubing.

The only criticism of the pole is that it does not quite make it to the 21' (6.4m) suggested by the label, however 19'6" (5.94m) is pretty good going for such a small light weight mast.

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RF Low Pass Filters

Ron Sanders VK2WB

Low pass filters are commonly used in amateur equipment to reduce the passage of harmonics. This is particularly true at the output of transmitters, where any radiated harmonics can cause interference and are also illegal if above the legal threshold. There is plenty of information in the various handbooks that cover the theory and application of these filters. The most common low pass filters used at the output of amateur transmitters have equal input and output impedances, eg 50 ohms.

THIS ARTICLE WILL SHOW some practical results obtained from the construction of 3.5MHz low pass filters using readily obtainable components, and having input and output impedances of 50 ohms. Such filters would be used at the output of a home-brew 3.5MHz transmitter, with the aim to reduce the harmonics reaching the antenna system. Commercial transmitters will have equivalent filters built into them so that they comply with regulations.

For transmitters in the HF range the following spurious emission standards generally apply:

- rf power less than 5W at least 30dB below the fundamental
- rf power less than 25W at least 40dB below the fundamental
- rf power more than 25W at least 60dB below the fundamental
- at any rf power spurious emissions must never exceed 50mW

Low pass filters are usually specified as having a number of elements. The elements referred to are the reactive components used to construct the filter, namely the capacitors and inductors. Since the form of the filter is symmetrical it always ends up with either a capacitor

or an inductor at the input and output. The most common form is to use capacitors at the input and output, but some PA stages are unstable if they look into a capacitance and require an inductance at the input to the filter.

Circuits

The simplest and most common filters are called Chebyshev filters and are the type used in this article.

Fig. 1 shows a filter which consists of 3 capacitors and 2 inductors, which adds up to 5 reactive components and is therefore called a 5 element low pass filter. Without going into the theory of the filter it can be seen intuitively that this is a low pass filter because of the capacitors which connect from the signal path to ground. With an increase in input frequency the capacitive reactances will decrease thereby providing lower impedance paths to ground that will reduce the level at the output with respect to the input. As a matter of interest, guess what would happen if the circuit had capacitors and inductors reversed? We would have a high pass filter, but that is not the subject of this article.

Fig. 2 shows a 7 element low pass filter, and Fig. 3 shows a 9 element low pass filter.

Construction

All component values were measured by "amateur" type equipment and are within about 5% of the calculated (theoretical) values which are given in the circuit diagrams. These values were obtained from the ARRL Handbook reference section for Chebyshev low pass filter designs, 50 ohm impedance, C in/out for standard E24 capacitor values.

The components used in the filter determine the stability of the frequency response, so it is important to only use components with low temperature coefficients. The ideal capacitor is a silvered mica type with adequate voltage rating for the application. These are obtainable in 1% tolerance from RS Components, but are not cheap. An alternative is to use polystyrene capacitors which are available from Dick Smith and possibly other suppliers. The required values can be made up from parallel combinations of standard values. Where possible, try to use similar values to make any parallel combination as this will more evenly distribute the rf current flowing in each capacitor, and so reduce any localisation of heat in a single component. For example, it would be best to make up a 1330pF combination from 2 x 470pF and 1 x 390pF, rather than 1 x 1000pF and 1 x 330pF. If you have the facilities to measure the values you can almost eliminate the tolerances in the individual capacitors and come up with a 5% tolerance for the combination. Refer to AR April 98 p26 for a suitable instrument.

The inductors for this particular filter are wound on AMIDON T68-2 toroidal cores, which are available from advertisers at the back of this magazine. Toroidal cores are almost universally used in these filters as they have very little coupling between inductors and are much more compact than air-wound coils. To reduce the coupling to a minimum, it is good practice to position adjacent cores at 90 degrees relative to each other. This is most important where the filter is crowded into a small space. Spread the turns evenly around 270 - 330 degrees circumference of the core and use the heaviest gauge that will comfortably fit in that space in a single layer. Do NOT wind the core so that the winding occupies 360 degrees, as the capacitance

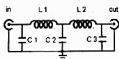


Fig. 1 4MHz 5-element low pass filter

- L1, L2 3.03 uH,
22 turns 24g on
T68-2 core.
- C1, C3 750 pF
- C2 1500 pF

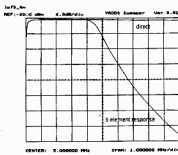


Fig. 2

between the ends will produce spurious responses that are unpredictable. This warning applies to any toroidal inductor used in rf circuits.

Double-sided pc board makes a very good platform for these filters. The top side is used as a ground plane with circuit connections on the lower side. The filters also lend themselves to a "rats-nest" type of construction on a single sided pc board, with the inductors sitting in line between the input and output and the capacitors connected from the junctions to the ground plane.

Several filters can be built on a single board with suitable switching of the input and output. The input and output impedances match up to RG58 coax and make connections much easier. These filters can be enclosed in a screened box with coax connectors at the input and output.

The construction is quite simple and a filter can easily be made up in an hour or two. The filters shown here were operated at about 50W without noticeable heating of the inductors.

Results

The relative response plots of each filter are shown in Figs. 1a, 2a and 3a and were obtained using the "sweeper" designed by Tibor Becce and featured in *Electronics Australia* over several months in 1996/7.

Note that the response of all plots is almost identical below 4MHz, and shows that there is almost no loss through any of the filters.

Details

1. Fig. 1a shows the response of the 5 element filter shown in Fig. 1. Above 4MHz it falls at about 11dB/MHz, and is better than 24dB below our reference at 7MHz which is the second harmonic of the start of the 80m band at 3.5MHz. This represents an attenuation of at least 250, in other words any 7Mhz content present at the input to the filter will be reduced by a factor of 250. If 1W of 7MHz rf was applied to the input there would be less than 4mW at the output.
2. Fig. 2a shows the response of the 7 element filter shown in Fig. 2.

Above 4MHz it falls at about 18dB/MHz, and is about 40dB down at 7MHz. By adding two more elements to the first filter we have gained about 16dB extra attenuation of the second harmonic of 3.5Mhz. Now 1W of 7Mhz rf at the input would only be about 100 uW at the output.

3. Fig. 3a shows the response of the 9 element filter shown in Fig. 3. Above 4MHz it falls at about 30dB/MHz, and (by extrapolation of the plot) is about 60dB below our reference at 7MHz. We have now gained another 20dB attenuation at the second harmonic of 3.5MHz. A 1W input at 7MHz would now result in only 1 uW at the output.

Other Frequencies

Similar filters can be made for other HF bands. Details of component values are listed in the ARRL Handbook reference section on filters.

The characteristics and winding information for AMIDON cores is listed in the ARRL Handbook. For the HF amateur bands the following iron powder materials are suitable:

| material type (mix) | frequency coverage (MHz) |
|---------------------|--------------------------|
| 2 | 1.8 - 10.5 |
| 6 | 14.0 - 18.5 |
| 10 | 20.0 - 30 |

For operation at higher rf power a physically larger core should be used. This could be made up of two T68(-) cores stacked together which would be adequate for 100 - 150W of rf output.

Conclusions

The choice of the filter type, whether it should have 5, 7 or 9 elements will depend on the particular application.

A transmitter which has only a single ended PA stage will have considerable second harmonic content at the output, and should use at least a 7 element filter to reduce the harmonic radiation. If the transmitter above generates only low power, say less than 25W, a 7 element filter will probably be adequate. A single ended PA that generates more than 25W should use a 9 element filter.

Where a balanced PA stage (push-pull) is used, the second harmonic is reduced by at least 10dB and a 5 element filter may be adequate depending upon the output power.

A 7 element filter is a good choice for most transmitters in the 100 - 200W range.

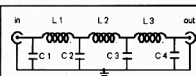


Fig. 2 4MHz 7-element low pass filter

| | |
|--------|--|
| L1, L3 | 2.86 uH, 21 turns 24g on T68-2 core. |
| L2 | 3.26 uH, 23 turns 24g on T68-2 core. |
| C1, C4 | 750 pF |
| C2, C3 | 1500 pF |

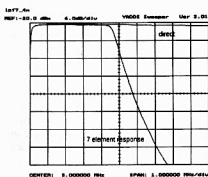


Fig. 2a

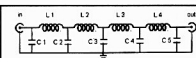


Fig. 3 4MHz 9-element low pass filter

| | |
|------------|--|
| L1, L4 | 2.86 uH, 21 turns 24g on T68-2 core. |
| L2, L3 | 3.26 uH, 23 turns 24g on T68-2 core. |
| C1, C5 | 750 pF |
| C2, C3, C4 | 1500 pF |

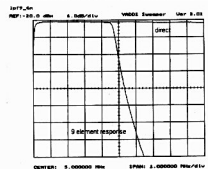


Fig. 3a

*HF-MT Dummy Load

By Ross Fraser VK2KVV

52 Terry Rd
Box Hill NSW 2765

This is a handy piece of test equipment, useful for frequencies from 1.8MHz to 30MHz. It can absorb a modulated carrier power of 200 watts continuous for about 2 minutes (Ref 1), enabling transmitter tuning off-air and so minimising interference to other spectrum users. Its construction is straightforward and it uses readily available parts. It is housed in a Milo tin or similar, and part filled with dry sand which aids in its power dissipation.

A DUMMY LOAD IS an artificial antenna that represents to the output of the transmitter an essentially ideal load. Therefore, the transmitter can be tuned to deliver its output into a correct load. Once the transmitter is tuned, it can be matched to the antenna. Ideally the dummy load will be exactly 50 ohms (the same as the output impedance of the transmitter) and also be able to absorb the power output from the transmitter. A dummy load is especially useful for tuning of a transmitter with valves in the final output stage. This is because a valve based output stage has to be manually tuned into a load. (Solid-state transmitters are generally broad-band amplifiers which are tuned by design and manufacture.)

Construction method

This article is essentially a reproduction of the high-frequency dummy load described by F C Judd (Ref 1). Figures 1, 2 and 3 should give any potential constructors sufficient information for making the dummy load

but I shall also describe my construction method: -

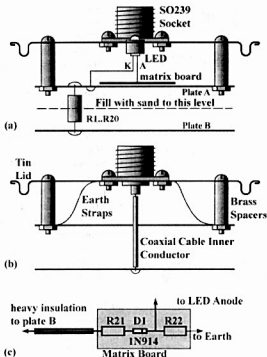
- The dummy load is housed in a Milo tin measuring 122 mm high and 105 mm in diameter. Obviously, any similar container would be suitable.
- Cut two circular plates (90 mm diameter) from other discarded tins (I used old coffee tin lids) and file off rough or sharp edges. It is also a good idea to clean the plate surfaces with a kitchen scourer or steel wool to assist soldering later on.
- Drill or punch holes (about 1 mm diameter) for the resistors in both plates. Lay one plate on top of the other so that the holes match up (refer Fig 3).
- Drill holes in the top plates for the support bolts and also in the centre for the centre conductor to pass through. Also at this stage drill a small hole on the outside of the top plate for the heavy wire leading from R21 (2.2 kohm, 0.25 watt) to the bottom plate of the resistor network assembly. The main reason for using heavy wire at this point is to provide mechanical support for the matrix board assembly. Also drill a hole in the centre of the top plate for the centre conductor to pass through.
- Insert all of the resistors between the top plate and the bottom plate and solder them in. I found that a good method for doing this is first to put the resistors through one plate, bend the resistor lead and solder it to the same plate and then line up the next plate and solder the other side of the resistor to it.
- Once the resistor network assembly

is complete the hard part is done. Solder the heavy wire in place and the centre conductor wire so that it is soldered to the bottom plate and passes through a hole in the centre of the top plate extending above the top plate by about 30 mm.

- Drill holes in the top of the tin lid for the SO239 socket and the socket supporting bolts, the main supporting bolts and the LED.
- Mount the LED, SO239 socket and, using 25 mm spacers, secure the resistor network assembly to the lid.
- Solder the protruding centre conductor wire to the centre conductor of the socket.
- Solder 4 earth straps (I used short lengths of braid from RG-58C/U coax) from the top plate of the resistor network assembly to the underside of the lid. I also soldered link wire from the SO239 bolts to the underside of the lid to ensure satisfactory earthing.
- The next thing to do is the matrix board assembly. See Fig.1 for the wiring diagram. I soldered R22 (5.6 kohm) from the matrix board assembly directly to the top of the lid. The heavy wire from the bottom plate of the resistor network assembly is soldered to one end of R21 (2.2 kohm).
- To complete the assembly I put a piece of stiff cardboard behind the matrix board assembly and using a cable tie secured it to one of the resistor network assembly bolts. This was to ensure that the matrix board assembly didn't accidentally short against one of the spacers and also to keep the matrix board assembly in place.
- The final thing to do is to put the sand into the tin. I used Sydney sand (which has about the same consistency as sugar). I also made certain that it was completely dry by baking it in a cake tin in a conventional oven for 30 to 45 minutes on 200 degrees Celsius. If the sand contains foreign particles it might be a good idea to sift. Once the sand is clean and dry put enough into the tin to fill it half way up the resistor network assembly.

***HF-MT stands for
"High Frequency — Milo Tin"**





References:

1. F C Judd (G2BCX) *RF Dummy Loads Part 1*, Practical Wireless, Jan. 1983

Related articles:

1. Drew Diamond (VK3XU) *Power Meter/Dummy Load (with notes on PEP)*, Amateur Radio, April 1993
2. Hank Prunckun (VK5NCA) *Build a Simple Dummy Load for Your Shack*, Radio and Communications, February 1998
3. F C Judd (G2BCX) *RF Dummy Loads Part 2*, Practical Wireless, Feb. 1983

Parts:

- 20 x 1 kOhm, 2 watt, 5%, carbon resistor (R1 to R20)
- * I obtained R1 to R20 at RS Components, Phone: (02) 9737 9966
- 1 x 2.2 kOhm, 0.25 watt, 5%, carbon resistor (R21)
- 1 x 5.6 kOhm, 0.25 watt, 5%, carbon resistor (R22)
- 1 x 1N4148 (or 1N914) diode (D1)
- 1 x square SO-239 UHF socket
- Miscellaneous: Metal container (122mm x 105mm); 2 x 90mm circular tin plates; 5/32" x 40mm round-head bolts and nuts; 1/8" x 12mm round-head bolts and nuts; 2 x 25mm spacers; matrix board (40mm x 30mm); 1 x 5mm Red LED plus holder; earth straps; stiff cardboard (40mm x 30mm); cable tie.

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The Car Battery As A Low Cost Power Source

Ian Cowan, VK1BG
cowan@effect.net.au

A large amount of radio equipment now available, at least for input power levels up to about 200 watts, is designed for operation from a nominal 12V DC supply. This normally means that the equipment can be expected to operate satisfactorily if the on load supply voltage is between about 11.5 and 15 volts.

With care, the bottom end of this range can be satisfied unaided by the humble car battery, and many operators are opting for this approach to powering their new black boxes. Car batteries are cheap, and can perform this role very satisfactorily, but are subject to mysterious early failures if not treated correctly.

In this article, I want to provide guidance on the use of the car battery so that operators may get the best results available for a given situation.

Structure of the normal lead acid car battery

Not all lead acid batteries are the same; a battery for any particular purpose is an optimised compromise, designed to suit the intended final application. The car battery is no exception to this. The main characteristics of the car battery's design environment are vibration; a frequent, but shallow charge/discharge cycle regime; heavy current discharges for engine cranking; intermittent recharging from a voltage regulated, current limited source; and of course, the user's expectation of endless life!

There are now three broad categories of car battery available to meet these conditions. By taking particular account of the characteristics of each individual type, it is possible to avoid the early failure syndrome sometimes encountered by amateurs.

For our purposes there is no need for a detailed knowledge of the chemical reactions taking place during the charge and discharge cycles. Most will be familiar with the fact that the usual cell is made up as a 5, 7, 9, or more, layer sandwich of plates. Positive and negative plates are interleaved, and there is always one more negative than positive plate - for the simple reason that the negatives are structurally stronger and can therefore help restrain the positives from falling apart.

The active materials of both plates are pressed into lead alloy grids, designed to optimise mechanical strength, conductivity, active material content and retention, and resistance to the hostile sulphuric acid environment. The negative grid in wet cells contains about 6% antimony, the purpose of which is to improve mechanical strength. The active material within the grid is "spongy lead", which is chemically a very pure, but porous, form of the metal. The negative plate usually gives little trouble.

It is at the positive plate that most of the problems in lead acid batteries occur, and it is in the grid structure of this plate that most of the compromises are worked by makers to achieve optimum results for a particular application. Ideally, the positive grid should be made of the purest possible lead, but this ideal is unavailable in a car battery because of the lousy mechanical properties of the pure metal!

Some quite complex alloys have been worked up over the years but the major component (other than lead) of these is either antimony, or occasionally, calcium. Antimony is preferred because it not only strengthens the grid structure, but also improves the battery's load cycling tolerance. The active material at the positive plate is nominally lead oxide, but here too, makers have attempted to defeat the odds by adding small quantities of other materials to achieve particular objectives relating to the intended end use.

Battery failures are usually due to corrosion of the positive grids and support structures or to progressive decay/crumbling of the positive active material.

There are three broad classes of car battery in wide use, and these I will call conventional, low maintenance, and maintenance free.

Conventional battery

The conventional battery (often called heavy duty nowadays) has antimonial positive plate grids, usually with about 6% antimony. They work reasonably well in their intended environment and are quite forgiving of misuse. However, antimonial poisoning of the spongy lead active material at the negative plate is a serious problem.

By an electrolytic reaction, antimony from the positive plate grid is deposited during the charge cycle on to the negative active material. Here it sets up a local reaction with the spongy lead that has the effect of locally discharging the negative, and causing the electrolysis of water from the electrolyte.

The discharging negative calls for more input from the charger, and since this charge current flows also through the positive plate, the positive becomes overcharged and therefore suffers corrosion damage. This battery type is characterised by high water loss, and in fact water use and charge current both rise steadily through the life of the battery, as the antimonial poisoning of the negative plate progresses.

The conventional battery has poor charge retention, and needs regular top up charges to keep it in good condition - not a problem in most cars. Failure occurs at the positive plate when grid corrosion becomes excessive. Fortunately, the poisoning effect is mitigated somewhat by regular cycling between charge and discharge, as this tends to disperse the fine layer of antimony which forms over the active material at the negative plate.

This type of battery is not suited to long term float charging.

Low Maintenance battery

The low maintenance battery arose from experiments to see how low the antimonial content of a car battery could go whilst still maintaining satisfactory mechanical properties. The answer turned out to be about 1.8% so long as some

other additives are also included in the alloy in small quantities. The result has been a battery that still suffers a degree of antimonial poisoning of the negative plate, but has markedly less water and electrical losses than a conventional battery.

It is not quite as rugged as the conventional battery but will give good results in its designed application. Like the conventional battery it needs shallow cycling and discontinuous charging for antimony dispersal. It, too, is unsuited to long term float charging.

Maintenance Free battery

Maintenance free batteries make use of recombination electrolyte (RE) technology in which recombination of hydrogen and oxygen takes place within the cell as the gases are formed, so maintaining the electrolyte level and composition. The electrolyte quantity is limited, and it is either restrained within a microporous separator, or is gelled in silicic acid.

These batteries are provided with oversized negative plates that do not become fully charged, and therefore do not liberate hydrogen. It is here that recombination takes place. Oxygen that forms at the positive plate when it reaches its full charge state readily diffuses through the limited volume of electrolyte to the negative plate where, by a fortuitous set of circumstances, it eventually combines with hydrogen to form water.

The recombination process is readily overloaded, however, and when this happens gassing occurs and the cell dries out and is destroyed. RE batteries use lead calcium type grid alloys (with other additives such as tin) for both grids. This does away with antimonial poisoning of the negative plate and so the battery has very low self-losses, which unlike the antimonial flooded battery remain more or less constant throughout the life of the battery.

Cycle life is typically not as good as for the antimonial battery though the makers attempt to compensate for the loss by the addition of additives to the electrolyte. The RE battery generally has poor tolerance to deep discharges. Of the three car battery types, however, the RE

battery would offer the best performance on continuous float charge provided the charger was well regulated.

Applications

Amateur applications will normally be classified as home, mobile, or portable.

In the shack, the choice of battery type depends mainly on the charging arrangements. If long term "float" charging from a well-regulated charger (ie 13.50 volts DC, $\pm 1\%$, with low ripple) is intended, the maintenance free type is the battery of choice. It is free of the antimony in the positive plate that promotes water loss and positive plate corrosion on long term float.

Deep discharges should of course be avoided, but an occasional burst will do no harm and may even be beneficial to battery life. The maintenance free battery is the least tolerant of the three car battery types to deep discharge, but is the most shack compatible, since there is no chance of acid spillage, nor is gas liberated under normal conditions.

Conventional or low maintenance types may also be used in the shack, but not on float charge. Gentle cycling is best for these. The conventional battery offers the best resistance to deeper discharges. However it is always important to fully recharge as soon as possible after a discharge in the interests of minimising harmful sulphation. The recharged battery should then be allowed to sit in a cool place until next needed. However regular refresher charges (say at two-week intervals) are needed to minimise sulphation.

The mobile application is close to that for which the car battery has been designed, and therefore requires the least intervention by the operator to look after the battery. Because the radio equipment will on occasions be used when the engine is off, the battery will be subjected to deeper than normal discharges and so a conventional battery can be expected to give the best life and reliability. The other types can also be used, of course, but as said above, these have less tolerance to discharge cycling. In any case, battery charge recovery can be slow in a vehicle in a typical suburban environment, and refresher charging is therefore recommended as soon as possible after anything more than a slight discharge. Portable and field day work

usually requires that the battery is the prime source of power for the duration of the exercise, and it is therefore subject to deep discharge. If this is something of a regular occurrence, none of the car battery types will last very long!

The operator would be advised to invest in the more robust semi-traction (or golf buggy) type of battery that is built better to tolerate this type of service, but at higher cost of course. For occasional field excursions, however, the best of the car battery types is clearly the conventional "heavy duty" type. The maintenance free type should be avoided because of its inherent intolerance of deep discharges.

Charging Techniques

The apparent simplicity of the automotive charging system is really quite deceptive. In spite of the low component count, the battery charger built into a car has performance which is difficult to duplicate in a much more complex mains driven unit. It has good voltage regulation, high current capability with inherent current limit, and even thermal compensation. It operates for a few hours only in a normal week, yet car batteries in normal service commonly last 4 years, and sometimes 6, in automotive service. The only drawback is that with this system it takes perhaps 24 hours of continuous operation to restore a 95% charged battery to the fully charged state.

For mobile operation, it is usually sufficient to let the car's generator look after the battery, and therefore forget about it. The exception to this is the case where the battery has been subjected to an extended discharge (say 10 AH or more taken from it). With intermittent engine operation, it could take weeks for full recovery, and the battery is therefore at risk of suffering permanent sulphation damage.

A refresher charge from an external source is useful in this case: A constant current charge of about 500 mA should be continued until the battery terminal voltage reaches about 14.5 volts. (14.0 volts in the case of MF types). 24 hours at this charge rate is typically enough, yet the battery is not at great risk if the operator forgets to take the charge off for a few extra hours.

Shack-bound batteries, and those used for portable operation are best charged from a voltage-regulated, current-limited source. After a discharge, the battery will at first draw a heavy current (held down by the current limit in the charger only) and should remain on charge until the charge current has fallen away to some low, but constant value. It should then be taken off charge and left alone until next needed.

If the idle period is long, the battery should be given refresher charges as if it were in storage - see below. Maintenance free batteries can probably be left continuously floated across the output of a well-regulated charger, but this does not apply to the other two types. Suitable charging voltages are typically 14.0 volts for conventional and low maintenance types, and 13.5 volts for maintenance free types. These voltages should be held to within about 1% when the battery is approaching full charge. Current rating doesn't matter; a larger charger shortens charging time while in the constant current mode, but it takes more than 24 hours anyway to restore the battery to full charge. Beware of chargers which can overcharge a maintenance free battery. If the battery

gasses due to overload of the recombination reaction, the electrolyte will lose water, and with the restricted amount available, this is serious. Permanent, irreversible damage is the result. At least with the wet cell types, water addition is possible, albeit with some difficulty in the case of the low maintenance types.

Battery Storage

The main thing to remember here is that batteries undergo a self-discharge reaction when left on the shelf. This is worst in the conventional type, and is a direct consequence of the high antimony level in the positive plate grid. Such batteries should not be left without refresher charges for more than about 2 weeks at a time, and the 500 mA regime I described above would be suitable.

Alternatively a spell of a day or so on a constant voltage charger would also be effective. Maintenance free batteries should have low self-losses, and could be left on the shelf for a couple of months between refresher charges. Low maintenance batteries, because they contain a little antimony, are somewhere in between the other two in this respect.

Safety

Batteries are dangerous in two main ways.

Burns

The first is that the electrolyte is a corrosive material capable of causing severe burns to unprotected skin, and blindness if it gets into the eyes. It makes sense to wear goggles when handling batteries in any way and to ensure that there is a supply of fresh water nearby to flush away any electrolyte that may escape from a battery. To have a packet of bicarbonate of soda close at hand is also a sensible precaution.

Explosion

Second, batteries can explode with considerable force if ignited. This is due

to the fact that when a battery gasses, as it does when approaching the full-charge state, it produces an optimally explosive mixture of hydrogen and oxygen. A tiny spark is all that is needed to trigger an explosion sufficient to blow the battery apart, spraying electrolyte everywhere. Extreme care is therefore needed to ensure that no spark or naked flame is allowed in the vicinity of a battery on charge, or one that has recently been on charge.

This poses problems when connecting equipment, including the charger itself, to or from the battery. Normal rules concerning the avoidance of accidental short circuits to the terminal posts apply. Further, one must never connect or disconnect an energised charger to the battery, nor connect or disconnect a load circuit which is not isolated from the load.

Chargers should be switched off at the mains first, and then be disconnected from the battery - preferably after a suitable time delay to allow the dissipation of residual hydrogen. Fortunately hydrogen is a highly mobile gas, and it escapes fairly quickly if given the chance. No doubt many untrained people unknowingly owe their eyesight to this fact!

Short circuit

A third, usually less hazardous feature, is the very low internal resistance of the car battery. Anyone who has inadvertently short-circuited the terminals of a healthy car battery will know that a fearsome amount of energy can be liberated in a short time. So care is necessary to avoid inadvertent short circuits.

It is therefore essential that a suitable fuse or circuit breaker is used to ensure safe, rapid isolation of the battery in the event of an electrical fault occurring somewhere downline from the battery. Failure to do this can result in severe damage to equipment wiring, or even fire.

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**Amateur
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CLUB NEWS

Send your club news and events to Club News

Compiled by Bob Harper
VK4KNH

Central Highlands Amateur Radio Club Of Tasmania

They're coming to get you!

Nestled in the foothills of the Australian Alps is the small town of Dargo, a little gem.

It seems that the Tasmanians have chosen this quiet locale as the site of their northern invasion that informed sources predict will occur on Friday the 26th of February 1999.

The plan is to dig in until at least Sunday.

Activities will include general sight seeing, winery visits, four-wheel drive trips, fishing, some radio events and telling lies around the campfire. We also hope to have a couple of trade displays on site so you can check out some of the latest gear.

Being social types we extend an invitation to all amateurs and radio enthusiasts to come and join us.

Activities will be centered on the **Dargo Caravan Park**, owned and operated by Tom and Rosemary Freeman.

Planned call-in frequencies are 3.585, 7.115 and 146.45 using the club call VK7CHT suitably qualified operators being present.

We expect to be monitoring all frequencies from mid morning on the Friday 26th.

So hook up the van or chuck the tent in the boot (don't forget the esky) and come join us.

Sites are available within the park for either tent or van. Some cabin accommodation is available if you get in early.

For site bookings and general inquiries contact Claureen (VK3LCM) or Dave (VK3JKY) on 03 5977 4439 (AH) or email

TTSSYS@peninsula.hotkey.net.au

The Great Amateur Radio Funday

THE VERY FIRST Great Amateur Radio Fun Day will be held at the **Daisy Hill Environment Park (QLD) Sunday 21st February 1999** 11am. It's a great place to bring the family.

The social and fun get-together has been organised by Brian VK4BBS. Brian hopes he can be assured of the support of SE Queensland clubs. Not only should you and your fellow members attend but you'll be free to talk to other visitors interested in Radio and Electronics, particularly Radio Amateurs and Shortwave Listeners. There may be some looking for a local radio club in your area to join.

Brian is further requesting support with a small, portable demonstration or activity as an indication of what Radio Clubs and Amateur Radio, particularly yours are all about.

These small demonstrations could include, Portable Packet, ATV, Fox Hunt, Portable RTTY, Mobile HF, Small Potable Antennas, CW Demo, Portable SSTV, 10 and 6m repeater operation etc.

The Southside ARC has indicated that they are prepared to help with the day perhaps a small activity demonstration also. City Of Brisbane will put on a Portable RTTY demo and I have heard that the Brisbane ARC have been discussing support.

Maybe being a member, Brian may

be able to encourage the SEQ Trekking Radio Amateur group to come along and cook some tea and damper for us.

The frequency to monitor for directions is **147.000Mhz**. The day will be a totally BYO and free although a small, gold coin donation would be appreciated from each adult with funds raised going to the Royal Flying Doctor Service.

A couple of competitions are being run, remember they are FUN as that is the whole intent of the day.

Bring along *The Most Unique Working Crystal Set* and *The Most Humorous Working Crystal Set*. Remember they must all be working and be demonstrated to be so. A Gold Coin entry fee, again for the RFDS, applies to each entry. It is hoped that the local FM Community stations and other media will attend during the day. An invite will be made to the RFDS to attend also. The SEQATV group may Videotape the day for replay on the ATV repeater?

If you are from "out of town" you're more than welcome! Bring your handheld. 147.000MHz -the Brisbane VHF Group Repeater will be our liaison channel.

The FUNDAY is in the Koala Park at Daisy Hill Environment Park, at the end of Daisy Hill Rd. Brian VK4BBS needs our support Feb 21, does he have it?

Central Coast Field Day

DON'T MISS Australia's biggest and best exhibition and sale of Radio and Communication equipment at the Central Coast Field Day on Sunday, 28th February 1999 at Wyong Race Course, just one hour north from Sydney.

The country's major electronic equipment traders will be there with field day bargain prices and tonnes of disposals gear will be on offer in the flea market. See many exhibits and displays from

radio and computer clubs and other groups ranging from vintage radio to packet radio and satellite communication. Opposite the Wyong railway station, the gates open 8.30 am wet or fine with undercover displays and trading.

Admission: Adults \$10.00, Seniors and students \$5.00, children under 12 free.

For more details see www.ccarc.org.au or phone (02) 43402500.

TECHNICAL ABSTRACTS

Gil Sones VK3AUI
30 Moore Street
Box Hill South Vic 3128

Auto Antenna Switch for Icom Transceivers

Auto Antenna Switch for Icom Transceivers An automatic antenna switch interface to drive coaxial antenna relays was described in CQ May 1998 by Art Rideout WA6IPD.

The interface uses the band information voltage available from the accessory socket of Icom transceivers and converts it into driving outputs for antenna selection coaxial relays. If a multiband antenna is used then those band outputs are paralleled.

The WARC 18 and 24 MHz bands

require a switch selection. The 10 MHz band was not included but only needs another driver circuit connected to pin 1 of the IC.

The circuit makes use of an LM3914 as a voltage level detector.

The LM3914 drives relay driver PNP transistors type MPS2907 which provide a current drive from 12 volts to drive the antenna selection relays. The circuit of the device is shown in Fig 1.

The relay is just a small 12 Volt relay that provides an auto switch on driven by the transceiver.

The 10 K pot is a scaling adjustment so that only one band at a time is selected. To adjust initially set this to about 4 K that is just under half and then adjust on test.

Magnetic Dial Scales

Temporary non-permanent dial scales were described in the QST Hints and Kinks column of Bob Schetgen KU7G in the October 1998 issue of QST.

The item was called Magnetic Tuner Rings and was from Rick Mintz W1TY. The idea is to use magnetic rubber sheet to provide an additional dial scale on a Tuner.

Magnetic rubber sheet, such as used to make refrigerator magnets, were used to provide a ring around the dial scales

of a Drake MN2000 tuner which has an aluminium panel.

The magnetic material came with a contact type adhesive applied.

This adhesive was removed and a less permanent rubber adhesive was used so as not to permanently affect the panel.

Dots of magnetic material were then used with coloured paper or tape stuck to them to provide movable tuning markers so as to allow quick adjustment on the various bands. The arrangement is shown in Fig 2.

There are local sources of the magnetic rubber material.

One source is business stationery shops. They sell the material for making signs that can be stuck to magnetic boards.

Another cheaper source is to collect them free from the businesses that hand them out.

The auxiliary dial markers should be so arranged so as not to obscure the dial markings on the panel.

If the equipment has a steel panel you can dispense with the ring and just use magnetic dots that can be bought from many sources including retail stores and newsagents.

Using Film Canisters

In March 1998 CQ, George Murphy VE3ERP described the use of 35-mm film canisters in making open wire line and a dipole centre insulator assembly.

While the article was aimed at QRP operation the ideas would be applicable up to a reasonable power level.

A dipole centre insulator assembly made out of an old toothbrush handle and a film canister is shown in Fig 3.

The plastic toothbrush handle acts as the actual centre insulator and the film

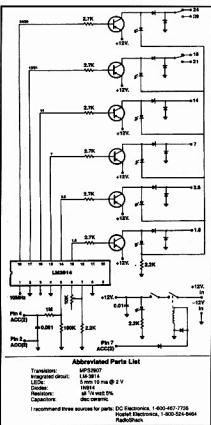


Fig 1. Automatic Antenna Switch

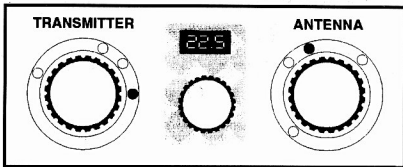


Fig 2. Magnetic Rings and Magnetic Dots record ATU settings.

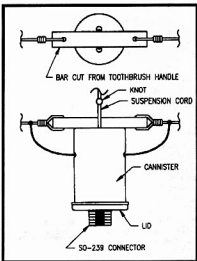


Fig 3. Dipole Centre Insulator using ToothBrush Handle and Film Canister.

canister is used to mount the coaxial connector.

Open wire line using film canisters as the spacer insulators is shown in Fig 4.

This application also uses a toothbrush handle as the dipole centre insulator.

George advises using care when making holes in the canisters and the use of an Exacto knife is recommended.

Drills need to be used very carefully, as the material is soft.

An alternative is to burn holes into the canisters with a soldering iron, but not with an expensive one as the plastic is acidic when burnt.

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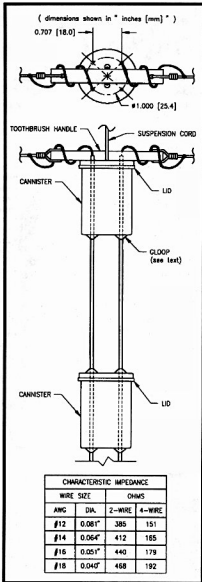


Fig 4. Open Wire Line Using Film Canister Spreaders.

Notice of Annual General Meeting

THE ANNUAL GENERAL MEETING of WIA Federal will be held over the weekend of 1, 2 May, 1999. In accordance with the WIA Federal constitution, the positions of Federal President, Federal Directors, Company Auditor and the various Federal Coordinators are declared vacant at the AGM. The Federal Council will then elect Office bearers for the forthcoming year from those who have been properly nominated.

At the 1998 AGM of WIA Federal, the Federal Council adopted the motion that at future AGMs all nominations for the office bearers must be received by the Company Secretary at the registered address of WIA Federal by no later than 42 days prior to the AGM.

Therefore, I wish to advise that the closing date for such nominations to be made by Divisional Councils is close of business 19 March, 1999. If any WIA member feels that they can help in any way, they should contact their Divisional President or Federal Coordinator.

A list of currently established coordinator positions is given below for information

P J Naish

Acting Company Secretary

WIA Federal

List Of Coordinator Positions Within WIA

Federal:

- IARU Region III Liaison Officer
- ITU International Regulatory and Radiocommunication Study Group Officer
- ACA Liaison Committee
- Editor
- Publications Committee
- Federal Media Officer
- Chairman Federal Technical Advisory Committee
- Electromagnetic Compatibility coordinator
- AMSAT Coordinator
- Federal Education Coordinator
- Intruder Watch Coordinator
- Federal WICEN Coordinator
- Federal Contest Coordinator
- Federal Awards Manager
- Historian
- QSL Collection Curator
- Videotape Coordinator
- Federal QSL Manager (VK9/VKO QSL Bureau)
- International Travel Host Exchange Coordinator

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BARGAINS

Get in quick and grab a bargain! These ex-demo Yaesu transceivers may have a few minor marks or scratches, but you'll save a fortune. Two-year warranty applies but stocks are strictly limited.

FT-10R Compact 2m hand-held

A compact 2m hand-held with a unique clam shell design and rear-mounted NiCad battery pack that provides 5W RF output as standard through the use of a MOSFET power amplifier and extensive component miniaturisation. Built to a tough MIL-STD 810 rating for shock and vibration resistance, the FT-10R also uses gasket seals for improved weatherproofing.

Features:

- Tx 144-148MHz, Rx 140-174MHz
- RF output: 5, 2.8, 1, 0.1W
- Dual watch facility
- Large Omni-Glow display
- High efficiency speaker
- CTCSS encode/decode
- Auto battery save, Tx save and Auto power off
- 12V DC socket
- Keypad frequency entry
- 99 memories
- Digital Code Squelch
- Size: 62 x 100 x 42mm (WHD)
- Comes with FNB-41, 9.6V 600mA/H NiCad, A16D version keypad, belt-clip and AC charger.

D 3650

8 PIECES ONLY
2 YEAR WARRANTY
\$299
SAVE \$100

FT-51R 2m/70cm hand-held

The FT-51R uses a sculpted case and diecast rear panel for strength, and dual microprocessor control for ease of use. At just 57 x 123 x 26.5mm (W.H.D) including NiCad battery pack, it's comfortable to hold or clip in a pocket. Includes inbuilt "Spectrum Scope", scrolling text help messages, and power-saving MOSFET amplifiers.

Features:

- Tx 144-148, 430-450MHz
- Rx 118-174, 420-470MHz
- 2m RF Output: 2.0, 1.5, 0.5, 0.02W
- 70cm RF Output: 1.5, 0.5, 0.02W
- Twin VFOs per band
- 120 memory channels
- Dual-band & dual in-band receive facilities (VHF/VHF, VHF/UHF, UHF/UHF)
- DTMF Paging and Messaging
- Large illuminated LCD screen
- Auto battery saver, Auto battery off
- CTCSS encode/decode
- Australian version selectable Auto repeater shift
- Includes FNB-31 600mA/H NiCad, belt clip, AC charger, CA-9 charging stand and high efficiency antenna.

\$599
SAVE \$100
8 PIECES ONLY

2 YEAR WARRANTY

Battery packs to suit FT-11R and FT-51R

| | | | |
|---------------------------|--------|---------|-----------|
| FBA-14 dry cell case | D 3626 | \$19.95 | |
| FNB-35 7.5V 900MAH NiCad | D 3624 | \$59.95 | SAVE \$40 |
| FNB-33 4.8V 1200MAH NiCad | D 3623 | \$69.95 | SAVE \$30 |
| FNB-38 9.6V 600MAH NiCad | D 3625 | \$79.95 | SAVE \$37 |



FT-290R II 2m all-mode transportable

Covers 144-148MHz and features FM, SSB (USB/LSB), & CW operation with 2.5W or 250mW switchable output power, twin VFOs and 10 memories that store mode and simplex or repeater frequencies. Selectable tuning rates are also provided for SSB/CW and FM (SSB- 25Hz/100Hz/ 2.5kHz and 100kHz; FM-5/10/20kHz and 1MHz). Mode specific features include a noise blanker and clarifier control for SSB/CW, plus a full set of functions for FM repeater operation, making this unit very simple to operate. It comes with a flexible rubber antenna, an FBA-8 battery holder which takes 9 x C size batteries (standard or NiCad) and a hand-held microphone.

D 2875

9 PIECES ONLY
2 YEAR WARRANTY
\$699
SAVE \$200



CD-2 mobile fast charger

A fast NiCad charger and mobile cradle assembly to suit the FT-11R and FT-51R hand-held transceivers. Uses a regulated switched-mode charging circuit for cool operation and light weight. Reverts to trickle charging once the battery is fully charged. Includes cigarette lighter lead.

D 3628

20 PIECES ONLY
2 YEAR WARRANTY

\$49.95
WAY BELOW COST!

FL-2025 2m 25W Amp

Turn your FT-290II into a powerful mobile/base transceiver with this bolt-on RF amplifier. Replacing the FBA-8 battery holder on the FT-290II, it boosts transceiver output to 25 watts. Requires 13.8V DC.

D 2863

5 PIECES ONLY
\$199
SAVE \$100



BARGAINS

MORE EX-DEMO BARGAINS WITH FULL WARRANTIES

Stocks are strictly limited.

Mastercharger 1 Fast Desktop Charger

The Mastercharger 1 is a compact fast charger that operates from 13.5V DC and uses switch-mode technology plus a Philips battery charge monitor I.C. to charge NiCad batteries between 4.8V and 13.2V. Suits Yaesu FT-23, 73, 411, 411e, 26, 415, 815 and 530 handhelds. The charging cradle on each MasterCharger can easily be replaced, allowing for the insertion of a new cradle to suit other transceivers. Requires 12-15V DC at 1.5A, and comes with a fused cigarette lighter cable.
D 3850



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With 12 different audio filtering selections, this speaker set suits most transceivers and receivers. A selectable high/low pass filter coupled with a large high-sensitivity speaker produces superior audio compared to that of standard transceiver speakers. The SP-6 has two input terminals with front panel selection, and a front panel headphone socket with filtered audio.
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ARRL 1999 Amateur Handbook

Since 1926, The ARRL Handbook has meant many things to several generations of hams, engineers and technicians.

- To the technically minded it's an unimpeachable reference for data, project ideas and electronics theory.
 - To the operator, it's an overview of what hams do and how they do it
 - To the newcomer, it's a primer on the modes and equipment hams use and basic theory
- The 1999 version is the 76th edition of this book. A must for those who haven't seen the ARRL Handbook recently.

B 2236

OVER 1000 PAGES

\$59⁹⁵



WIA 1999 Amateur Callbook

This is the latest edition of the WIA Call Book. The Call Book has been produced by the WIA for many years to assist all those interested in amateur radio with a wide range of information as well as the listing of the call-signs, names and postal addresses of all radio operators licensed by the Australian Communications Authority.

B 2343

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FT-3000M 70W 2m mobile

An amazing 2m mobile transceiver with up to 70W RF output, MIL-STD 810 shock and vibration resistance, wide band receiver coverage (110-180 and 300-520MHz), dual-band or dual in-band receiver facility, 1200/9600 baud Packet socket, and a very large back-lit alphanumeric LCD screen. The FT-3000M has a total of 81 memories, as well as a Spectrum Scope mode that allows you to view activity above and below the operating frequency, or activity among six programmed memories. A programming menu holds over 50 transceiver settings for easy "set and forget" access, and includes a scrolling text help guide, while twin fans provide optimum cooling during long transmissions for greater component reliability. The FT-3000M is supplied with a MH-42A6 hand mic, DC power lead, and detailed instruction manual.

D 3700

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Specifications:

- Frequency Range: Tx: 144-148MHz. Rx: 110-180, 300-520, 800-824, 849-869, 894-999MHz
- RF Output: 70, 50, 25, 10W
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Packet: VK5LP@VK5WI.#ADL.#SA.AUS.OC

All times are UTC

Bacons

V73SIX/b frequency is now 50.014 ...
Tim V73AT.

A note from Geoff GJ4ICD

Accompanying the last Internet Six News, **Geoff GJ4ICD** said: "Please note that this is the last info that you will receive. I am leaving GJ to take up running SMC Ltd in the UK on 4/1/1999. I will not be active for some time, you will have to log in to the new URL: <http://www.radiosales.demon.co.uk/50dx.html> Thanks to all for the fun/help and friendship during the past years, and the 166 countries on 50 MHz!" [Geoff's new callsign will be G4ICD.]

VK9L report

"Three days with dipole only. Weather horrid, continuous rain and 50-60 knot winds, I was unable to erect the Yagi. No contact on six metres, although a few with JA ops on 28.885 MHz. My apologies to those looking for me, but I can't control the weather. So on my day of departure it was fine! ... **Scott VK4JSR**.

Gordon VK2ZAB advises that his station is active seven days per week for forty-seven weeks per year. Four weeks in July and one week in March are off.

His schedule is: All Local times, Monday through Friday: Instant response to calls from 0730 until 0900 on 144.100 MHz. Instant QSY to 70 cm, 23 cm or even 6 m. Beam pointed north from 0730 until 0800, south to south west from 0800 until 0900. Frequent CQ calling. After 0900 144.100 MHz is monitored most days until 1630, with beam usually west. Allow a couple of minutes for a response and call again. Once may not be enough during this monitoring period.

Currently, sked with VK2TWR on 432.160 MHz at 1930. Would extend this to include any contacts from 1915 until 2000, but only on 70 cm. Currently on 432.150 MHz at 2045 until about 2115 for sked with VK4AFL and sometimes VK2FZ/4, Mondays and Thursdays only.

Saturday and Sunday: As for weekdays except that 144.200 MHz is prime

frequency from 0730-0915, with the beam from 0900 to 0915 west to north west before reverting to the same routine as weekdays until 1630. There is no operation at night.

Would be pleased to modify the current routine to suit any worthwhile contact attempts, try me.

Steve VKSSEA in PF95ic writes: On 13/12 at 0345: 50.180 VK2BA 589 near Coffs Harbour. Proves that 100 metres of mountain from my QTH in the Adelaide foothills and VK2 doesn't mean a thing on sporadic E! 0415: 50.306 VK6RBU/b 599. No stations worked in VK6. 0425: 50.200 VK4PU 518 - 60 km north of Brisbane. Called me as I was beaming 270 degrees. Swung beam around to 45 degrees and signal 589. 0437: 50.200 VK6KDC 599 - 25 km south of Bridgetown. 0550: 50.306 VK6RBU/b 599. 0555: 50.200 VK6KDC 599.

From **Tony VK3CAT**: 4-5/12: 2350-0028 TEP opening from Melbourne to JA, call areas 1, 2, 3, 4, 6 and 7 worked. Signals up to 5x9. 4/12: 2250 VK4ABP/b 5x5; 5/12: 0235 VK8RAS/b 5x8.

On two metres worked **Jim VK3AEF** (Nhill) 29/11 at 0930 and 1930; 30/11 at 1930 and 2/12 at 1930. Signals into Melbourne 4x1 to 5x2. Jim has also worked VK3AFW and VK3AMH. Believe that contacts with VK1MP unsuccessful

Ray VK4BLK sends:

14/12: 0045-0100 XE1KK/b 539 19/12: 0004-0035 XE1KK/b 539 23/12: 0114-0129 FO5DR/b 549 25/12: 2334 V5VWB heard. Did not respond to call. 2359-0257 XE2UZL/b 57, in for three hours 4/12: **Bob ZL3TY** reported as follows: Many JAs worked between 0022 and 0300 in districts 1, 2, 4, 5, 6, almost all on 50.110, also HL5XF. At 0004 Asian TV on 49.750 very strong, also VK TV.

Mike ZL3TIC reported similar conditions: 3/12: 2350 N6XQ 5x8. 4/12: JAs from 0200 to 0336 in districts 1, 2, 4, 5, 6 plus HL5XF. Indicators came from strong Asian TV offsets on 49.750 around 0300 to 0300. At 2230 XE1KK/b up to 599 with QSB - in for a half an hour.

Andy Hewitt XE1G3SYD reports (via

UKSMG News Page) that: On 14/12 best opening on six metres that I have been able to participate in, between 2232 and 2350 I worked ZL3ADT, ZL3TIC, ZL2KT, ZL3NW, ZL2TPY, ZL1ADP, ZL3TGL, ZL4AAA, ZL3TY, VK7IK/7, VK3AKK and XE1/SMOKAK, W5UWB by backscatter. The HF2FG/b beacon audible from 0038 - 0100 when I went QRT.

Repeaters

Steve VK2KFJ, is assembling a list of six metre repeaters, he advises of a ZL repeater! Input 52.570, output 53.750 MHz. Located at Colonial Knob, near Wellington. Would have been operational now except for frequency concerns.

Two metres and above

Russell VK3ZQB: Sporadic E on 2 metres. On 19/12 I worked VK8GF and VK8TM 5x7 0255 UTC. Band open for about 2 hours extending to at least Melbourne where Allan VK3XPD worked both as well. Jeff VK8GF reported were working VK4 prior to the band opening southward.

Gary VK5ZGC at Tarlee, 80 km north of Adelaide reports VK5RSE/b on 144.550 is audible most nights after 2000 hours local time. Locator PF95JR. He says: I am about 200 metres above sea level using an ATN 13 element beam up about 15 metres, fed with LDF5-50 and with a 20 dB pre-amp with an ICOM IC-251A.

The strength varies between nothing and S2 mostly although it has been up around S7. Have heard nil activity on 144.100 MHz. Distance about 415 km.

Gordon VK2ZAB: *Let anyone thinks nothing is happening here, this is an update of activity as the 1998/99 summer season approaches.*

1) Daily activity.

Activity every day on the bands, 2 m and above. This is centred on 144.100 MHz Mondays - Fridays and on 144.2 MHz Saturdays/Sundays. Peak is from 2030 until 2200 that is local morning. Some activity occurs at night as well.

2) Propagation events prior to 11/12-13/12:

[a] Early Trans-Tasman Duct

Notice of this extraordinary event seems to have been missed.

It occurred on 1/10, the earliest duct in the season for at least the 20 years of my Sydney experience.

It resulted in 2 m SSB contacts from Sydney stations including myself to ZL2TAL and ZL2VAL both at New Plymouth.

[b] Auroral Scatter

Occurred on 7-8/11, allowing contacts from Sydney stations to VK3 and VK5. Guy VK2KU the main participant here. I worked VK5NC on 2 m SSB.

[c] The Leonids meteor shower on 16-17/11

This was the most spectacular meteor event for VHF propagation in memory. Sydney stations were truly in it even though our location, in the middle of the other large areas of amateur population, meant that the distances from here to those locations was less than optimum. I made contacts on 2 m SSB with VK4TZL, VK2FZ/4, VK3TMP, VK3AFW, VK3TDV, VK3AXH, VK4KZR, VK4JSR, VK4ZBH, VK3TMP/m, VK3XPD, VK4BRG, VK5NY, VK5ACY, VK7XR, VK7JG, and VK4KK.

Guy VK2KU returned from Adelaide and with perfect timing a duct opened to ZL at 2000 (11/12 UTC) and lasted until a violent thunderstorm at 0500 on 13/12.

Worked on 144 MHz: ZL1IU 5x9 many times, ZL2TAL 4x1, ZL2VAL 5x1, ZL3NE/1 5x2 several times, ZL1TBG 5x6 several times. The ZLIs were much stronger than those further south. Other VKs heard beaming/working ZL: VK2BIT, VK2ZAB, VK2TZ, VK2DXE, VK2DVZ, VK3BWT.

Heard on 142 MHz but not worked: ZL3NE, ZL2TAL. Nothing on 1296 MHz.

From Gordon VK2ZAB: Sporadic E contact on 2 m SSB was made from Alice Springs to Sydney today 19/12/98.

Contacts between VK8 and VK2 and stations have been heard each way from Alice Springs and Sydney but that is all. No two way contact between the two centres is known to have occurred until now.

Sydney stations were aware of the Sporadic E opening on 6 m and VK2ZAB had been advised by Gary VK4ABW that the Alice Springs 2 m beacon was audible in Townsville. This resulted in many 2 m CQ calls to north and north west by VK2ZAB in Sydney, VK2KU in Springwood and VK2FHN in Blackbutt. The latter had learned via 6 m that Gary VK4ABW had a 2 m contact to Alice Springs.

At about 0430 Adrian VK2FZ/4 advised VK2ZAB by telephone that he had just made 2 m contact with VK8GF in Alice Springs. Adrian had been alerted by Glen VK4TZL who, it is assumed, had also made the VK8 contact.

VK2ZAB returned to the shack; the Alice Springs 2 m beacon was heard at about S2. A few minutes later VK8GF heard in

contact with a VK4. A couple of calls resulted in contact at 0443. Jeff VK8GF was 5/3 and gave VK2ZAB 5/5.

Guy VK2KU disappeared at this time. He telephoned VK2ZAB, returned to his shack and made contact with VK8GF. A few minutes later, Mike VK2FLR made contact with VK8GF also.

There may have been other contacts to VK8 from the Sydney area but these are not known to me as I took the dogs for their walk. [You did, Gordon? ... VK5LP]

From Tony VK3CAT: On 19/12 at 0520 VK8RAS/b on two metres was 4x1 to 5x4. Slow QSB. VK8RAS/b on six metres 5x2 to 5x5 at the same time.

Heard VK3AFW and VK3TMP work VK8GF, no signal here at 0530. VK8GF heard here at 0535 with signals from 3x1 peaking to 5x7. Worked VK8GF prior to amplifier failure at 0538 signals 5x5 both ways. The 2 metre beacon peaked here at 5x7 and was audible until 0555. The 6 metre beacon remained at 5x2 to 5x7.

Barry VK3BJM was alerted by Alan VK3XPD on 19/12 that two metres was open to Alice Springs. "I heard Jeff working David VK3XLD, then Mark VK3TLW, Tony VK3CAT, before I worked him at 0539; Jeff was 5x5 solid to start with, but started to get choppy at the end. I was last Melbourne station to work Jeff. My first Es contact on two metres.

Alan VK3XPD did a great job to get as many VK3s and VK5s on air so quickly, especially as most of us seemed to be not near the phone at the beginning of the opening.

John VK4FNQ has moved QTH west to a 200-acre block near Charters Towers. So far has only a 1/4-wave vertical on the roof for southern stations, and a 6 element Yagi for six but it is stuck north.

Amateur radio to the rescue

Russell VK3ZQB sent information in relation to a request on 22/12 to help the Water Police locate an electronic position indicating radio beacon (EPIRB). With help from the amateurs in Mount Gambier, the beacon was quickly located.

World microwave records fall

New World distance records at 24 and 47 GHz were set this past September and October, according to accounts in the *RSGB Microwave Newsletter* for October 1998.

JM3KMO, on Mt Norikura on Honshu Island, made a 24 GHz contact with JR3EDZ, on top of Mt Tsurugi on Shikoku Island, in early September. Distance was 402 km, which exceeds the existing 1993

world record of 397 km.

The new 47 GHz mark of 221 km was established on October 3 by F6BVA, operating from Mt Chian (JN33du), and F5CAU, on Mt Aigoual (JN14sc). The weather was wet and foggy with the temperature just above freezing. The previous record of 203 km was set in Italy earlier in 1998. In contrast, the North American record has stood at 105 km for more than ten years.

The previous record on 120 GHz was 0.7 miles set in July 1994 by WA1MBA and WB2BYW. They also hold the 144 GHz record of 2.3 miles. Bob Johnson KF6KVG and Will Jensby W0EOM have been working for the past six months on gear for 120 and 144 GHz. Both systems are based on Hughes harmonic mixers and 9 inch Cassegrain feed dishes.

On 2/10, a one-way contact at a distance of 2.9 miles was made on 144 GHz. Bob could hear Will, but his transmit power was lower, and no two-way was made. The sets were modified for 120 GHz, and on 16/11 a short-range test was made to calibrate the receivers and bore-sight the antennas. Contact was then made at 2.9 miles, exchanging information by slow-speed CW. This was later extended to 3.3 miles (5.3 km).

Russell VK3ZQB wrote on 11/12: *The 1998/1999 microwave season is about to get under way with the arrival of the first significant high pressure cell for the summer. The small cell of 1024 Hpa has moved slowly over the southern states and consolidated to give some short distance super refractivity. Contacts on 2 m, 70 cm and 1296 MHz from western Victoria to Melbourne yielded extremely strong signals.*

Allan VK3XPD connected his masthead pre-amp to his HP spectrum analyser and could see the signal received on 1296 from VK3ZQB 300 km away, indicating the strength of signals received. The super refractive layer persisted from 0930 on 8/12 to 0000 on 9/12.

Closure

Next month I should be able to report of the degree of activity during the Summer VHF/UHF Field Day Contest on 9/10 January.

Thoughts for the month:

1. When you want to break bad habits, drop them; and
2. Successful people not only take opportunities, they make them.

73 from
The Voice by the Lake.

ar

ALARA

Christine Taylor VK5CTY ALARA Publicity Officer
16 Fairmont Avenue, Black Forest SA 5035
Packet: VK5CTY@VK5TTY

Change Of Callsign

Meg formerly VK5AOV is now VK5YG. No, it is not so she will be known as the green giraffe. It came about partly because she caused some confusion with her call, while she was caravanning.

It is just as well that Meg did not want to become incognito with a new callsign. Her voice is much too well known!

We have teased her a bit about it, but we'll get used to it. Good Luck to you VK5YG

The Alara Web Page

Webaddress:

<http://crash.tig.com.au/~bishops/alara>

I hope those of you on the Internet have looked for and found the ALARA website.

Designed for us by Peter VK2HCU, Dot VK2DDB's son, it has all sorts of information about ALARA and maybe even a photograph of some of the ladies manning the food stall at the AHARS Buy and Sell, in November. Kim VK5HUS took a digital photo which he sent to Dot for inclusion. Another marvel of communications!

Now That's A Great Callsign

Whilst in Oslo, Gwen VK3DYL met a 15 yo YL, from Latvia. She has a callsign many YLs would envy - YL1YL. No-one will be likely to forget that one!

New, Special Callsigns To Listen For From G-land

A new Club Callsign has been issued for Bylara, our sister association in the UK. Associated callsigns for England, Wales, Scotland and Jersey are M0BYL, BW0BYL, MM0BYL, and MJ0BYL (there are no authorised operators in GI, GD or GU, at the moment).

These callsigns will be used in YL Nets and when in contact with a YL and can be used for OM contacts for those of you who are seeking YL Awards. Special QSL cards are being designed, so listen for the calls and add to your card collection.

Eyeball Contacts

Last year, when Sally VK4SHE (our previous ALARA column correspondent) was overseas she had eyeballs with two of the YLs she sponsors overseas.

In Worthing, Sussex she met Jackie G7MZI and OM Peter G4LKW. It was with them that Sally and Rex saw the town of Horsham, where they used to live and the



amazing Brighton Pavilion.

At the end of August Sally and Rex met Patsy W7PAT and her OM John W7SIR - note the 'vanity' calls they have. Patsy and John had a full program organised to show visitors the beauty spots of Oregon.

Nothing beats having a local contact to be sure you see everything most worth seeing. As radio amateurs we are very lucky that we can have such local contacts all over the world. I hope we are as good ambassadors to our visitors. I hope that whenever you hear an interstate callsign on the repeaters or an unusual accent, you answer the call and make the person welcome.

It is very off-putting as to call on a repeater in a strange city and have no response. This happened to us in England.



Tracing Your Family Tree?

Rex has been doing this and it paid off on their travels. Sally and Rex met a number of 'cousins' after having made family tree enquiries of them. With one they spent two weeks travelling the Midland canals in a narrow boat. They also joined family gatherings, one in England the other in the US.

They saw places they would otherwise have missed just because one of the cousins could say it was worth seeing.

If you haven't yet started tracing your family tree maybe you should do before you next go overseas.

In Britain I spent time in a local library and now have photographs of streets and houses that my ancestors once occupied. Something to pass down to my children.

YL-Meets

As a last word about the Svalbaad Meet the photo of Gwen VK3DYL dressed in a yellow 'mac' at the helm of the 10-metre sailing yacht "Maken" (meaning Seagull) was used for Gwen's 1998 Christmas cards.

Plans for the ALARAMEET in Brisbane are progressing well and a number of people have indicated they will be there. If you are thinking about it, please let Bev VK4NBC know. You can change your mind but it will help with planning. Some 30 (THIRTY) ZL-YLs have indicated interest!

Initial Announcement

YL2000 Meet in NZ

Date: - 29 Sept - 1 Oct 2000

Diary this now, much more information shortly, or visit the webpage

<http://www.wave.co.nz/pages/osborneg/y2000.html> or contact

International YL2000
C/o Biny Owen ZL2AZY
550 Kane Street,
Pirongia 2450 NEW ZEALAND
Tel: +64 7 871 9992
Fax: +64 7 871 9190
Email: y2000@iname.com



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AMSAT AUSTRALIA

Bill Magnusson VK3JT

RMB 1627 Milawa Vic. 3678 Email: vk3jt@amsat.org

Oscars for SEDSAT and PANSAT

National coordinator:

Graham Ratcliff VK5AGR

Email: vk5agr@amsat.org

AMSAT Australia net:

The AMSAT Australia net is held on 80 and 40 metres LSB each Sunday evening. During daylight saving time in South Australia the net is on 7088 kHz +/- QRM with an official start time of 0900 UTC (with early check-ins at 0845 UTC). During the rest of the year, the net is on 3685 kHz +/- QRM with an official start time of 1000 UTC (with early check-ins at 0945 UTC).

AMSAT Australia newsletter and software service:

Graham VK5AGR publishes the newsletter monthly. Subscription is \$30 for Australia, \$35 for New Zealand and \$40 for other countries by AIRMAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia

GPO Box 2141

Adelaide SA 5001

Keplerian Elements.

Current keps are available from the Internet by accessing the AMSAT FTP

'SEDSAT-OSCAR 33' (or simply 'SO-33') and PANSAT-OSCAR-34' (or simply 'PO-34') respectively.

We can expect keps for these satellites to appear under these headings from now on.

SSTV Activity from the MIR Space Station

Live SSTV images have been transmitted from the Russian MIR space station.

I have not heard the signals myself but the quality of pictures uploaded to the digital birds has been quite good. They show scenes of activity on board MIR and some shots taken through windows. In a number of these shots, parts of the MIR superstructure are visible.

SSTV equipment was transported to the spacecraft earlier this year and first appeared on the air around December 11th. Several amateurs reported copying the images on 2-metres, but plans call for the SSTV transmissions to move to a frequency in the 70cm band.

Various stations reported hearing the call R0MIR in CW before the SSTV transmission began.

Evidently neither of the cosmonauts aboard MIR during the current tour of duty is a licensed amateur. This no doubt accounts for the lack of voice activity recently.

SSTV however is another matter.

Being transmit only there should be no regulatory problems associated with this mode or the packet PMS/digipeater. Miles Mann, WF1F who supplied the equipment to the Russians says the system operates in automatic mode and can display a new image every two minutes.

AMSAT Frequency Coordinator, Graham VK5AGR and Miles had reached agreement on 437.975 MHz as a spot for SSTV activity from MIR.

It is expected that a move will be

made to this frequency early in 1999. Packet and SAFEX will be switched off when the SSTV system is in operation.

Full details on how to receive the SSTV transmissions are available on the Internet at <http://www.ultranet.com/~sstv>.

At the time of writing an unofficial schedule of packet on weekdays and SSTV at weekends is reported as being in operation.

The SSTV images transmitted by MIR use the Robot Research 36-second colour format. I'm led to believe that a PC and sound card or "Hamcomm" interface can be used with suitable software to receive these images.

Such software can be downloaded from the above web-site. Unfortunately the popular JVFAX software does not support the Robot 36 SSTV mode that is currently in use by the MIR space station.

ISS Amateur Radio Facility News

Former Astronaut Ron Parisse WA4SIR will be remembered for his amateur radio operations from the Space Shuttle.

Many Australian amateurs made contact with Ron during his STS missions. He is now coordinating the amateur radio facility on the evolving International Space Station. Ron reports that the station will proceed in 3 phases.

The first phase will consist of 2-meter and 70cm transceivers and a packet TNC. The hardware is built and is currently undergoing qualification testing.

The second phase will see the introduction of higher power equipment with a digi-talker and configurations for cross band repeater operation.

The third and final phase will see the completion of a re-configurable station through the use of plug-in modules designed to operate on any band from HF through microwave, and be able to operate on any mode.

This station will be commanded from the ground and interfaced to ISS voice and video channels to allow ISS cameras to be used as a source for the SSTV system.

It is planned to have the first phase ready for immediate operation when the first crew occupies the ISS.

Continues over page

SEDSAT and PANSAT become OSCARS.

The tradition continues. Amsat News Service reports that these two satellites have been assigned OSCAR numbers. The OSCAR numbering system has been in operation since OSCAR-1 was launched in 1961.

For a satellite to be granted an OSCAR number three things must happen.

It must achieve orbit, its transmitter must successfully be turned on and finally the people responsible for its design, launch and control must make a request to AMSAT for an OSCAR number.

All these conditions have been met in the cases of SEDSAT and PANSAT and it is now appropriate to refer to the two new amateur satellites as

Brenda M Edmonds, VK3KT WIA Federal Education Co-ordinator, PO Box 445, BLACKBURN VIC 3130

PanSat PO-34 News

PanSat, an American Naval Postgraduate School project, was launched from the shuttle Discovery last year.

Its spread spectrum digital transponders will be available to amateur radio operators in the near future, along with software to utilise this technology.

The PO-34 command station is located in Monterey, California.

If you want to 'bone-up' on spread spectrum transmission and reception before the event, the project Manager, Dan Sakoda, KD6DRA, recommends *The ARRL Spread Spectrum Sourcebook* as a good place to start.

Spread Spectrum technology will be new to most radio amateurs and it will be interesting to see how many take up the challenge.

As yet, the technique has little popularity among the wider amateur radio community.

The advent of a well-supported amateur radio satellite may hasten its acceptance among amateurs. It is widely used in commercial practice these days.

The PANSAT Team does not expect the satellite to be available to the Amateur Radio community for a few months.

If you have internet facilities you can keep up to date on this ground breaking project by visiting the PANSAT web site at: <http://www.sp.nps.navy.mil/pansat/>

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NEXT MONTH:

'A Satellite User's Perspective on the Millennium Bug' by Roy WOSL.

How your computer will react to the turn of the century and what steps you can take as an amateur radio satellite user to make the transition as smooth as possible. Don't leave it to chance.

Don't take notice of rumours. Read what one of the gurus has to say about your chances of making it safely into the next century and taking your AMSAT station with you.

The ACA intends to review the devolvement of amateur examinations and possibly make modifications to the present system.

THE ACA HAS notified the WIA that it intends to review the devolvement of amateur examinations and possibly make a number of modifications to the present system.

Naturally the WIA is seriously concerned and is having considerable input into discussions on the matter.

This may be an appropriate time for the WIA also to review the examination situation.

WIA Exam Service has been in operation since 1991. Older readers may remember when examinations were conducted by the Department of Communications and before that by the Postmaster General's Department. During the last 30 years, the only significant changes have been the move from essay-type to multi-choice questions, and the devolvement to external examiners.

The introduction of the Novice and Novice Limited licences have simply added more of the same to the system. The examinations that are required for a Certificate of Proficiency, the number of questions per paper and the pass marks have remained unchanged. The syllabuses have been re-arranged but the content is substantially the same as it was 30 years ago. Does this mean that we have got it right for all time?

The WIA Examinations Committee has revised all the syllabuses and submitted them for ACA approval, but they have been placed on hold until the review of the devolvement is completed. We are concerned that the current syllabuses do not reflect the present state of amateur radio and the advances that have been made in recent decades.

The Committee has also given much thought to the whole system. The amateur scene is vastly different now from what it was in the 1960s. It is time we re-

considered the purpose of the examinations and the status of the Amateur service.

We must accept that very few amateurs now build or service their own equipment, and that only a very small percentage operate over the full range of frequencies and modes permitted.

Some of the points that the Committee has considered include (apart from the perennial question of Morse code): ?

- Why have separate examination papers for the two levels of theory rather than two pass marks on one paper? ?
- Can we include some practical testing of operating procedures? ?
- Why do we still require a 70% pass mark? ?
- Do we still need a Regulations examination?
- Would a declaration of intent to operate within the regulations be sufficient? ?
- Is multi-choice questioning the only way to go? ?
- Are 50 questions really the magic number? ?
- Is WIA Exam Service operating efficiently now that the number of candidates is dropping?

Please note that the above questions are simply items that have been discussed.

At present no decisions have been made or policies finalised. It is expected that the Committee will make recommendations to the Federal Council on the stand it should take.

Individual members may care to consider these items and any others they consider relevant and discuss them at divisional level.

My best wishes to all readers for a productive and satisfying 1999.

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POUNDING BRASS

S P Smith VK2SPS

Peak Street Bateau Bay NSW 2261 (02) 4334 7743

What To Look For In A Paddle

CW OPERATION TO THE beginner must be very confusing with the variety of keys and keying equipment available. If you have never used a semi-auto or a single lever before, by all means start with an "Iambic paddle" and "Keyer".

(*Iambic* refers to the Latin 'poetic foot' or rhythm of di-dah, di-dah and is well named for CW signals.)

1. You have no bad habits to unlearn.
2. Iambic sending is very satisfying.
3. Importantly, it will be fun to use.

There are many iambic paddles available, so choosing the right one can be a very daunting experience, especially for the beginner. Try several models before laying out that hard earned cash. Perhaps you could borrow one to get a feel for iambic keying.

If you can't borrow a paddle and keyer here is some advice and general suggestions of what to look for.

Feel

Try as many models as possible, the feel of paddles varies tremendously. Some paddles are stiff, others feel very sluggish while others have a very light touch. Correct adjustment and personal experience are important in the feel of the paddle. A good paddle should feel smooth and precise during use; you should never feel like you are fighting it.

Weight

The heavier the better. A paddle that is too light will slip and slide during use. If you are a heavy hitter go for a very heavy base. If you have found that perfect paddle and want to purchase it, but feel that it is somewhat under weight this problem can be easily rectified. You can purchase sheet lead from most hardware and plumbing outlets. Fold it over a few times and glue it to the base of your

paddle or Blue Tack® it to the top of your paddle so you can vary the weight to suit.

Or you might blue tack the paddle to the table or use double-sided tape, either method will prevent the paddle from moving during operations.

Adjustability

Contact spacing and tension (ie return force) should both be independently adjustable for each side, but sadly this is lacking in some models. Most paddles allow you to adjust contact spacing and tension, but the range of adjustment varies tremendously.

The ideal paddle will allow contact spacing to be easily adjusted from almost touching to quite wide, about 10mm, and tension to be adjusted from a very light touch to quite heavy. Every operator has that perfect adjustment for their particular fist, one setting you favour might be unsuitable to another operator.

Again experience plays a role here. Once adjusted it should hold until re-adjustment will eventually be required due to normal wear and tear.

A rough guide for contact spacing is to use a standard business card, about 0.2-0.4 mm thick. Place this between the contacts and adjust the contact spacing screw until a snug fit is achieved. You don't want the contacts so narrow that the slightest knock will activate the keyer. You don't want the contacts so far apart that it feels like stirring a pudding bowl. You want to achieve a happy medium.

Another factor to look out for is how the paddle is adjusted and what tools if any are needed. Some paddles require Phillips head screwdrivers while the Bencher Model uses a small Allen key that is stored underneath. The key is more permanent especially if you don't want others to touch it, but if you are portable and misplace the key, no adjustments can be made.

The advantage of having a paddle that adjusts without the need for tools, such as using thumbscrews, is that you can adjust the key anytime, anywhere. Again it's up to the individual which method suits best. Some more expensive overseas models have interchangeable levers and the ability to set the distance between levers so the user can custom tailor the key to suit.

Connections

Basically there are two types of connections "Binding Posts" and "Soldered". Binding posts with thumbscrews allow you to attach the cable directly to the paddle without soldering. The disadvantage is losing the cable during transport. If a soldered connection fails when portable you need soldering equipment to repair it.

The Bencher Key cable for example is soldered underneath the base to three terminals, earth, a dot connector and a dash connector. A 3-core cable must be used, but avoid the 240-vac type cable.

Appearance

A good paddle will cost you good money. I consider it to be an expensive accessory item in the shack and one that, if looked after well, will outlive the operator. Depending upon personal taste they come in a range of colours, though standard models usually have a black, chrome or gold base, with different coloured finger levers. Some operators paint their own levers to give that personal touch.

Cost

Cost, like quality, varies tremendously. Expect anywhere from \$100 to over \$800 for a custom built paddle from the USA.

Conclusion

I hope this short article has helped you to understand iambic paddles and how much fun this style of operation can be for anybody willing to give it a go.

Next month:

- (1) Detailed look at the "Bencher Paddle" this being the most widely used paddle in Australia.
- (2) The Bencher history, mechanics and adjustments

See you then 73 Steve

ar

Timber masts and plastic guys

re; Article "Some Practical Tips on Timber Radio Masts"

by Drew Diamond, VK3XU, in December 1998.

I note that Drew has had trouble with cockatoos prising off the mast cap. If that is the case then his selection of galvanised wire guys, even if only for sentimental reasons, may have been fortunate.

When community radio station 6NR was established in about 1975, the guys for its transmitting mast were made from one of the synthetic insulating materials then available.

I do not know if it was Kevlar or not, but within about five years the local black cockatoos had damaged the guys so much that it was necessary to replace them with, wait for it, stranded galvanised wire!

By the way, does anyone know how to prevent parrots and cockatoos from damaging coaxial feedline?

Perhaps I should resort to open wire feeders.

Malcolm McDonald.
(Mac VK6MM)

188 Culeenup Road
North Yunderup WA 6208

SILENT KEYS

Kenneth Berkley 'Bud' Pounsett VK4QY 1925-99

IT IS WITH CONSIDERABLE regret that we announce the passing of Ken 'Bud' Pounsett VK4QY on Saturday the 2nd of January, at Caloundra. His well-attended funeral was held Friday, 8th of January in Brisbane.

Bud and his wife Bonnie produced the WIAQ news service for some 12 years during the 70's and 80's with Bud writing the VK4 Notes for AR Journal for a number of years. Whilst a VK2 Amateur he also wrote the monthly feature for AR on SSB when that mode

was in its infancy. An exceptional CW operator, Bud was often heard on 20 metres, known far and wide as "The Amateur Gentleman on air".

Bud was born in 1925 and during WW2 was trained as a wireless operator and later in Canada, as a pilot. He served in the RAAF during WW2, the Korean War and the Malayan uprising, mainly flying Lincoln bombers. He ended his RAAF career as a VIP Flight pilot, where he regularly flew Sir Robert Menzies and other noted personages of the 1950's.

After a distinguished RAAF career, Bud joined the ABC in Canberra and then AWA as a communications expert, ending his chosen second career only three years ago, after many years with the well known local firms of Delsound and Matthews Fire Alarms.

Bud was a kind hearted caring person who gave an immense amount of his time to the community.

He was a Board member of the Brisbane City Mission for many years and a WIAQ Councillor for nearly 20 years.

When Bud saw a need he quietly helped. He instructed many Amateurs; he ran the WIAQ Bookshop and finally in the 1980's he ran the VK4 News Service. He and his devoted wife, Bonnie, were renowned throughout VK4 and the South West Pacific as the voice of the WIAQ for well over a decade. Bud, you were one of nature's gentlemen and your sudden passing has left us saddened.

(Submitted by Guy Minter VK4ZXZ)

D W Boyd VK1NR

DR DERRICK WILDER BOYD, born in Scotland, and educated in Germany in the '20s was active as VK2NR from his shack in Katoomba, NSW, and later, VK1NR in Canberra, ACT.

Before the 1939-45 War, he lived in Africa, where he later served with the Kenya Mounted Rifles. On his discharge, he completed his medical degrees at Cape Town. He married Sani, and emigrated to Katoomba, where he entered general practice with his father, Dr Stanley Boyd.

His daughter Jeanetta and son Michael have both followed their father's profession, but so far have not been bitten by the radio ham bug.

In 1953, Derrick and I met at the Blue Mountains District Anzac Memorial Hospital, Katoomba, and discovered our mutual interest in amateur radio. Derrick determined to obtain his AOCIP and full licence, which he soon achieved. From then on, he was into home brew radio.

With the keen analytical mind of a diagnostician and his manual dexterity as a general surgeon, he made and used much gear for his working interest. He derived much pleasure from the improvements in radio technology over the years, and his ability to keep abreast of these.

Retirement entailed a move to Canberra, to be closer to Jeanetta and her family. He and Sani were soon settled

in, and he then focussed on mastering HFSSB, which fascinated him.

Neither Derrick nor Sani enjoyed good health recently, but his mind remained as active as ever, lately he was still thinking about astronomy, navigation, the trajectories of explosives, and languages. He was an expert in all of these.

Derrick died peacefully mid year (27/6/98). He leaves the memories of a gentle, caring husband, father and friend. We all miss his courtesy, integrity, freely shared knowledge and hearty belly laugh.

Keith L King VK2ABK, Dave Melbourne VK7NK, Noel Hill VK2JG

SPOTLIGHT on SWLING

Robin L. Harwood VK7RH

5 Helen Street, Newstead Tasmania 7250 (03) 6344 2324
e-mail: robroy@tassie.net.au

MY HOBBY HAS KEPT ME informed for many years with happenings throughout the world. This was especially true when I accidentally came across a major life and death communications emergency as the Sydney-Hobart yacht race progressed at the end of December.

YOU COULD CONTRAST this with the silent situation ten days earlier when Britain and the US bombed Iraq for four days, after the UN weapons inspectors said that Iraq was not co-operating.

Why the contrast? The normal US military HF communications activities and networks were conspicuously silent before and during the raids. I expect that they did not want to warn the Iraqis they were coming.

Once the raids finished just after commencement of the Moslem holy month of Ramadan, the chatter seemed to pick up again. There was some activity during the period but it was minor and well away from the Persian Gulf region.

So many divergent views on the bombing raids were broadcast. The BBC World Service pre-empted normal programming over the first day to concentrate on this one major story, and also increased their Arabic output on 21825 kHz within hours of the Baghdad raids. Again the American CNN stole the show by telecasting live the initial air raids on Baghdad, as they did seven years previously.

Iraq has no shortwave capability ever since "Desert Storm" in early 1992. There have been attempts to get shortwave going but the recent air raids targeted the telecommunications centres and infrastructure, largely destroying what remained. So the Baghdad regime was largely reliant on their supporters to broadcast messages of support. Also they were relying on western and other media outlets reporting their press conferences.

Ramadan is a very highly emotive period in the Moslem calendar and to have these raids so close to it, severely

antagonised the entire Islamic world. Many commentators saw the raid as a domestic diversion from the impeachment furore in Washington. It was also close to the Christian festival of Christmas, which strongly emphasises Peace and Goodwill to all men.

Just days before this happened we had the American President in Israel and Palestine, trying to speed up the stalled Wye River Treaty. Kol Israel and the VOA extensively covered this. With a general election in Israel expected in April or May, there are going to be plenty of words spoken in the next three months.

This year I was unable to hear many of my regular Christmas Day Broadcasts due to Mother Nature. Christmas night ended with a spectacular sound and light show.

It was an uncomfortably hot and humid day and I was trying to hear the Vatican Radio on 21850 kHz but the static level was far too high. Looking out, I noticed that there were continuous flashes of lightning illuminating the night sky. Naturally I quickly turned everything off and disconnected all my antennas.

These electrical storms heralded a change in the weather. This intensifying system went out into the Tasman Sea where the Sydney-Hobart yacht race fleet really copped it.

The channel of 4483 kHz was extremely busy on the night of December 27 with numerous yachts in difficulties, requesting assistance. Tragically 6 sailors lost their lives and over 50 others were injured. Several yachts were abandoned to the elements, as a huge air/sea rescue operation was launched. Many were winched from the sea by helicopters in atrocious conditions.

The majority of communications in this disaster were on HF, demonstrating that shortwave is far from being redundant. As from the end of January, many maritime stations will be closing their HF C/W stations in favour of satellite communications. Other modes used on HF are also being closed, such as radiotelephone and telex. The historic Dutch Maritime Communications station PCH - Scheveningen Radio closed down at 1515 UTC on December 31 just a week after its 94th anniversary. The British station, Portishead radio (GKA/GKB) is also closing down on June 30.

There are allocations for HF marine communications being hundreds of kilohertz wide. What is going to replace the HF C/W stations? Judging by what I am hearing, numerous Asian SSB stations usually in Cantonese, Indonesian or Korean are already there.

The American Globe Wireless network will be continuing on HF and are expanding their worldwide coverage by acquiring some of these facilities and operating them remotely from near San Francisco.

Globe uses e-mail and Telex although they have been reducing C/W as demand decreases. Globe is also using an encrypted form of Clover, allowing ships at sea to send e-mail via HF.

While monitoring Sydney Radio on 6507 kHz, during the Sydney-Hobart yacht emergencies, there was an unusual signal around 1300 UTC.

Once the crisis was over I went back. It was on AM yet was distorted and was easier on USB. I initially thought it was an Indo-Chinese marine station with the operator singing the weather reports. At the top of the hour, there was an Interval signal and a Vietnamese announcement. There was a mention of Cao Bang that immediately identified it as a provincial station in the hill regions of Vietnam. The station is using a very unstable transmitter that is never on the same channel for very long. It has been logged by others as high as 6590 and as low as 6390. What I found fascinating is the unusual singsong manner of the speakers, presumably in hill dialects. It is a broadcast station and only on apparently for three hours a day between 1100 and 1400 UTC.

Well that is all for February. 73,
Robin L. Harwood

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NOVICE NOTES

Peter Parker VK3YE 12/8 Walnut Street, Carnegie, Vic, 3163
Email: parkerp@alphalink.com.au Novice Notes
Online: <http://www.alphalink.com.au/~parkerp/nonline.htm>

Computers in the amateur shack

Most Australian amateurs own a personal computer. Word processing and games are the most common activities on these. However, a computer can be made to do many useful things around the amateur shack.

THIS IS A BRIEF TOUR of the many ways a computer can support amateur radio activities. Coverage of each item is necessarily brief. However, it is assumed that the reader has access to the Internet and will be able to obtain further information and/or software from the websites listed.

What type of machine?

A 486 or basic Pentium will serve well for most of the functions described here.

Programs are required. Advice on obtaining programs is given later. Accessories such as a printer, modem and (possibly) sound capability add greatly to the computer's usefulness.

Short wave listening

Would you like to sample HF reception without buying a short wave receiver? Or have you ever wondered what the bands sound like from the other end of the earth? If so, why not try one of the several 'web receivers' on the Internet?

A Web receiver is a HF radio receiver remotely controlled by a computer linked to the Internet. You type in the URL and hear an HF receiver through the Internet (providing you have a sound card installed). You can usually adjust the receiver's frequency, the mode of reception and the volume from your own PC.

Web receivers, though fun, are no substitute for your own receiver. Their main drawback is when another person uses it and changes its frequency. Also, it can take several seconds for any user made frequency adjustment to happen.

The short wave listening links section of the Radio Amateurs Canada website (<http://www.rac.ca/swl.htm>) has a section on web receivers.

Morse code

Morse Code can be transmitted and received by computer. All that is needed is the appropriate software and a simple interface unit that can be built at home. The limitation of simple computer Morse decoders is that weak signals can be buried in interference - the human ear will always do better.

See page 6 of December's *Amateur Radio* for an easy-to-build Morse decoder interface.

Morse practise software also exists. This can send text or random groups at a speed specified by the user. Links to webpages containing Morse-related software can be found at URL <http://www.rac.ca/cw.htm>.

Digital modes

Most operators of digital modes such as radio-teletype (RTTY), slow scan television (SSTV) and packet radio use a computer for sending and receiving. This requires a small interface unit between transceiver and computer and some special software (eg Hamcomm for RTTY and Baycom for packet).

The interface can be either easy to build and use only a handful of components (eg a Hamcomm interface unit or a Baycom modem) or an advanced project (eg a packet radio TNC).

Packet radio was covered in Novice Notes for December 1995. However, Amateur Radio has carried few beginner articles on the other digital modes.

The best way to get started on these digital modes is to approach another amateur who already has these modes set up and is able to assist with software and show you circuits of interface units/modems.

Log keeping

It often happens these days. You've just answered a call from a DX station. Without waiting for your transmission, you are called by name and your location and details known.

Impressed, you wonder how your contact can recall your details instantly. It's just a demonstration of a most useful application for computers in amateur radio - an amateur station log and callsign database. Several logging and contesting programs are available. <http://www.zeta.org.au/~richardm/hamlog.html> includes a demonstration copy of Ham Log v3.1, a contesting and logging program developed by Robin Gandeia VK2VN.

Callbooks

If you bought the 1999 WIA Callbook, you can send away for a copy on disk. The latest International callbooks are also available this way. There are some on-line callbooks available on the Internet. To find them, just type 'callbook' into any search engine. Just type in a callsign, and the name and address of the licensee appears.

Some Internet callbooks display extra information (eg an individual's e-mail address, URL or amateur radio interests) or allow you to make corrections. However, my experience is that at least for Australian listings, the free Internet callbooks are not as current as the WIA Callbook. You get what you pay for.

QSL cards

The use of programs to keep records of logs, countries confirmed and QSL cards sent and received was discussed earlier. If you have a good printer and the software you can print QSL cards on your computer.

Some logging programs include a QSL label-printing feature.

Satellite tracking

As often pointed out in the AMSAT Australia column, ownership of a computer is a must if you are interested in amateur satellites. Their main use is to calculate the workable times of the satellite. Computers can also control antenna headings - very useful for satellite operation, as both azimuth and elevation often have to be varied. Information and software can be obtained by joining AMSAT.

Grid squares

Amateur VHF/UHF operators often exchange four or six digit codes indicating their approximate location. These are called Maidenhead locator squares.

The world is divided up into 324 numbered squares based on latitude and longitude. They are easier to exchange on air than long place names.

If you know your latitude and longitude, you can calculate your Maidenhead locator using a program developed by John Martin VK3KWA.

This program also calculates the distance between any two squares and the correct beam heading for each station. To obtain a copy send a 3.5" disk and a stamped addressed envelope to VK3KWA at the address given in the callbook. This simple program will work on any IBM-compatible computer.

Automatic CQ caller

Those with a sound card in their PCs can turn their computer into an automatic CQ caller.

You need a single recording of a 20 second CQ call and a means to repeat it every minute or so. For convenience, an interface box containing input sockets (for the sound input from the computer and the microphone), an audio output socket (to the transceiver's microphone socket) and possibly switching circuitry for the PTT line would be desirable.

Those more

advanced could integrate the CQ caller with other functions such as transceiver control, beam steering and computer logging.

You can then collect detailed statistical information on all aspects of station performance (eg CQ:contact ratios on various bands and various directions, mean difference between signal reports sent and received, and more). A detailed assessment of the strengths and weaknesses of your station is possible with this data, particularly if other DXers your area were also collecting it.

Drawing circuit diagrams

Readers of Repeater Link will know of *Draft Choice*, a program for drawing schematic diagrams. My experience is that such programs are only justified if you do a lot of drawing and/or are willing to invest considerable time in learning them.

An alternative for those with an occasional need to draw circuits is MS Paintbrush. It comes standard in any PC.

Drawing a circuit with MS Paintbrush takes longer than drawing on paper, but the finished result looks professional. All schematics on Novice Notes Online were drawn with MS Paintbrush. The large size of Paintbrush's .BMP files can be reduced by converting them to .GIF files with Image Convert. The diagrams are clear, easy to read but quick to load. Below is a diagram drawn with MS Paintbrush.

Interference

It can be difficult to get computer and radio equipment to operate together harmoniously. Radio transmitters can cause interference to computer systems - when using an automatic CQ caller on 10 metres one day, I heard my recorded voice come through the modem while trying to log on to the Internet. Computers can also interfere with radio and TV equipment and, in extreme cases, make them unusable.

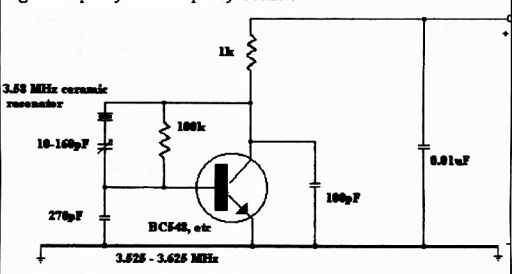
The first step to treating interference is to isolate the source of the problem. For example, does the interference go away when the modem or monitor is turned off? It can be wrong to assume that just because something is switched off, it is incapable of causing interference. I have a Canon BJC210SP printer that interfered with HF reception even when the computer was not being used. The solution was to unplug it from the wall.

Poor quality, badly shielded connecting cables sometimes radiate interference, the computer to monitor cable can be particularly troublesome.

The FCC has a World Wide Web site that includes an electronic copy of the *Interference to Home Electronic Entertainment Equipment Handbook* that discusses sources of interference and possible remedies. The Handbook can be viewed at URL: <http://www.fcc.gov/cib/Publications/tvibook.html>.

Figure 1. An example of a schematic diagram drawn with MS Paintbrush

Signal Frequency Beat Frequency Oscillator





Divisional News

FORWARD BIAS -

VK1 NOTES

Peter Kloppenburg VK1CPK
(02) 6231 1790

Adrian Dudok, the director of the National Capital Rally extended thanks on behalf of the event to the twenty or so operators who provided such invaluable assistance to the event on October 5th.

As a WIA/WICEN event, 18 field and two headquarters operators provided communications for safety and logistics information to the start and end of the events nine stages. Thankfully it was a relatively incident free event despite a very large field of some 93 competitors of which some 20 or so did not finish.

The Brindabella Motorsport Club, the organisers of the event, presented the Division with a donation of \$500 by way of a thank you for our assistance. As an added bonus, a dinner for two was made available at Blundells Restaurant at the Canberra Parkroyal to be presented to one of the Division's volunteers.

To select the lucky operator, the call signs of all the participating field personnel were placed in a hat (well it was actually part of an old 5.25" hard drive but that's another story). Fiona McCubbin-Mee, the secretary of the event did the honours and drew the call sign of Derek, VK2DRK from the "hat". Gil, VK1GH and Hugh, VK1YYZ who organised the participation of the field operators also extend their thanks to all who were involved. An enjoyable day was had by all!

Preliminary notice is hereby given about a rally that will take place on 7-8-9 of May 1999.

As some of you may know, the division is in the process of coordinating the erection of the new 18-metre mast at Mt. Ginini. Progress so far: The hole has

been dug. But it took 7 hours with a backhoe to accomplish. The soil contained many boulders and rocks that are notoriously difficult to shift.

Next job will be making formwork for the foundations and pouring the concrete. From the electronic side comes word that the makeshift and temporary 2-metre repeater at Mt Ginini will be removed and replaced with the original one. That unit has now been repaired and refurbished and should give a few more years of good service.

Cheers pkloppen@dynamite.com.au

VK2 NOTES

Eric Fossey VK2EFY
Division Secretary

ANNUAL GENERAL MEETING

When you read this, we will be well into a New Year and fast approaching the period when most Divisions hold their Annual General Meetings. In VK2, as previously advised, the AGM will be held at Amateur Radio House, Parramatta on Saturday 17 April commencing at 11.00 am.

The Annual General Meeting is where you, the members, elect the Council for the coming year - it is for you to decide whom you want to run YOUR Division for the next twelve months.

When you receive your ballot papers etc., please take the time to carefully read the instructions and then mark your choices (9). Return the form in the "reply paid" envelope provided. Don't forget - if you can't attend the meeting personally, please give your proxy vote to a friend who is attending and indicate on the proxy form how you wish him/her to vote on any motion.

Nominations for Council and "Motions on Notice" must be received at the office not later than 12.00 hrs on

Saturday 6 March 1999. The necessary Nomination Forms will be available mid February - please apply to the office.

During the AGM, the lucky winner of the New Member Prize - the ICOM 706 Mark II valued at about \$2300, kindly donated jointly by Icom Australia and Amateur Transceiver Radio Centre - will be drawn

Should you, therefore, have a friend who is thinking about joining the WIA suggest that now is the time and he/she contact the office for a Membership Application Form. A 'phone call to (02) 9689 2417 is sufficient - we will send one out by post, or the form may be downloaded from the VK2 Web Page at www.wia.org.au/vk2. To be in the draw completed applications must be received at the office not later than 26 March 1999.

DURAL

As I have stated many times in this column, the upgrade of the Dural site has been a major commitment of the present Council - not only in the improvement of equipment etc. but also in the site itself.

The driveway was surfaced with road base, the exteriors of the buildings were painted, grass is now cut and brush cleared on a regular basis to name just a few of the tasks undertaken.

However, the upkeep is an on-going necessity and our Dural Officer, Vice President Owen Holmwood VK2AEJ, advises that during the New Year Holidays a "Clean up Day" was again undertaken at VK2WI. According to a report given to the author by an independent source, "Dural is looking very good indeed". Thanks Owen and your Dural team.

PARRAMATTA OFFICE

A new supply of books has just been received from the USA and UK, which contains quite a few new titles - that is new titles not new editions - so why not call in and browse through something like 140 titles covering most aspects of our hobby.

By the way, continuing in our endeavours to offer the best possible service to our members we have now installed EFTPOS. This service will also be available at the WIA stand at the Central Coast Field Day at Wyong.

VK4 NOTES

**Alistair Elrick VK4FTL
WIAQ Treasurer**

FUN DAY

The very first Great Amateur Radio Fun Day will be held at the Daisy Hill Environment Park Sunday 21 February 1999 11am. Enter via Daisy Hill Rd from Winnetts Rd., which runs along side the Pacific Highway at Slacks Creek.

The day starts at 11 AM, so come along and don't forget your Gold coin donation to RFDS.

It's a great place to bring the family.

The Great Amateur Radio Funday is intended as a Social and Fun get together organised by VK4BBS.

Brian hopes he can be assured of the support of your club. Not only should you and your fellow members attend but also you'll be free to talk to those interested in Radio and Electronics particularly Radio Amateurs and Shortwave Listeners who may be looking for a local radio club in your club's area to join.

If attending from "out of town" you're more than welcome!

The Brisbane VHF Group 147.000 MHz repeater will be our liaison channel. Brian is further requesting support with a small, portable demonstration or activity as an indication of what Radio Clubs and Amateur Radio, particularly yours are all about.

These small demonstrations could include, Portable Packet, ATV, Fox Hunt, Portable RTTY, Mobile HF, Small Portable Antennas, CW Demo, Portable SSTV, 10 and 6m repeater operation etc.

The Southside ARC has indicated that they are prepared to help with a small activity demonstration also.

City Of Brisbane will put on a Portable RTTY demo and the Brisbane ARC and Redcliffe have been discussing support.

Being a member, Brian may be able to encourage the SEQ Trekking Radio Amateur group to come along and cook some dampers etc for us.

Brian VK4BBS needs our support on 21 Feb, does he have it?

NETWORK EXTENDS

Thanks to Gordon VK2AGE and David VK2YDN the Mt Nardi node is on air again. They changed the node to an X1J node (RPL440) and it is now operating very well with mail moving to both those stations. VK2 now have TCP/IP session facilities through to Brisbane. VK4's QDG congratulates Gordon VK2AGE for his efforts and work in providing this extension to the QDG network. (Info from Nev VK4TX)

WICEN BUNDABERG

News from Bundy's VK4JM who has 17 operators in training, in fact 17 operators about to successfully complete their WICEN training. 12 have joined the local SES Branch...well done!

Rusty is continuing message training on the Bundaberg City repeater Tuesday night. That's 147.800. A good rapport has been established with Bundaberg SES due in no small part to WICEN being involved in the drawing up of the welfare and disaster plan for the City and Burnett region. Sop's are now in place for local WICEN and Community roles.

ROAR

ROTARIANS OF AMATEUR

RADIO

ROAR ANZO Chairman Dr. David Portley VK4DP (an ex wiaq fed councillor) asks the ROAR group to try 21.403 at 1030UTC Sundays as he links into ROAR RIBI (G-LAND). A reminder, if you're on packet and a Rotarian, drop a packet to ROAR club station VK4WAY @ VK4PKT.

MORSE SOLDIERS ON

FIRST ROCKHAMPTON LIGHT HORSE HISTORICAL REGIMENT has approached Clive VK4ACC the Secretary of the Rockhampton And District Radio Club inc for assistance to learn Morse Code.

Some of them were keen to qualify officially and hope to sit for the 5wpm amateur radio CW test. Clive went along and addressed one of their meetings. They wanted to be as authentic as possible and intend later on to use light and flags (semaphore) as well. They were supplied with CW tapes and will contact Clive for further tuition as required.

WICEN

Currently transmitted on the beacon transmissions of BBS VK4ZZ is a short precis of any information regarding developing low-pressure systems in the Coral and Arafura seas. It is extracted from the Bureau of Meteorology Internet pages for High Seas areas 10 and 11, plus any cyclone information which might come to hand. These transmissions are designed to keep hams in the north informed and to flag any times they might need to source extra information on developing systems. The beacon transmissions go to:

147.6 VK4ZZ > VK4RAT
144.9 VK4ZZ > VK4RAT > VK4RCA
434.2 VK4ZZ > VK4RAT > VK4TUB
> VK3TCD
7.040 VK4ZZ > VK4DO > VK4FC

IPSWICH

The Technical "hoffsins" out in the West Moreton have just built up the DTMF decoder designed by Will VK6UU for their repeater VK4RKP 146.725 Mt Crosby. Also in the Ipswich clubs newsletter "DOPPLER" comes word on e-mail addresses. If you're looking for a fellow Amateur who might be on the Internet then check out Australia's largest listing of VK URL's and e-mail addresses available on the WWW. If you log on and discover you're NOT shown, submitting your info is as easy as a "double click". VK2NNN Allan is to be commended for the page.

For QNEWS listeners and readers it's simply a matter of clicking the links page on <http://www.wiaq.powerup.com.au>.

VK5/VK8 NOTES

**Ian Hunt VK5QX
Division President**

ANDY THOMAS AGAIN

By the time these notes appear we will have enjoyed a very special occasion. Dr Andy Thomas who operated with the callsign of VK5MIR from the Russian Space Station will have presented a lecture, especially for Amateur Radio operators, towards the end of January.

He is at present in Adelaide visiting his parents and friends and in his usual

way also undertaking various commitments in the public arena.

Andy initially wanted to meet and speak with those operators with whom he had made contact whilst on MIR, however, in view of the difficulty of ascertaining just who these were, we decided that the talk should be open to all.

The fact that the weekly Sunday news broadcast has been in recess did not make the task of promulgating information regarding this event any easier.

However, we have been able to spread the word pretty effectively through both the Packet Radio Network and by contacting as many clubs and groups as possible by telephone and e-mail.

As a result of our efforts we have a good idea regarding those who will attend and who did make a voice contact with Andy thus allowing to organise a "private" supper function following the lecture so that Andy's wishes may be met.

Also to take place at this occasion will be the presentation to Andy by the Acting Mayor of the City of West Torrens, Dr Reece Jennings, of the City's highest available Civic Award.

The last person to whom this award was presented was the State Governor, so Andy is certainly in honoured circles.

All of the event is to be video-taped, so we hope to be able to make copies of the tape available so that others unable to be present will also benefit from Andy's kind gesture towards the Amateur Radio operators of Australia.

QSL CARDS FOR VK5MIR CONTACTS

I am surprised at the apparent lack of interest in the special QSL card to be produced to commemorate the VK5MIR 2 metre operation by Andy Thomas.

Despite providing details several months ago I have so far received only around 30 or so requests for the QSL card.

I thought we had made it as simple as it could be requiring only a QSL request and a Self-Addressed Stamped Envelope (SASE). For contacts made outside Australia we need merely the amount of necessary postage costs.

QSL requests can be sent to Ian J. Hunt, VK5QX 8 Dexter Drive Salisbury East, South Australia 5109.

In view of the fact that it is difficult to determine just how many cards will be required I have put off production of the cards to a later date and I will probably in due course announce an actual cut-off date for requests.

This will allow us to have the cards printed without excessive wastage. You may note that the members decided by vote that the VK5 Division would pay for the costs of the QSL card production.

MEMORIAL FOR ALF TRAEGER

The late Alf Traeger held the callign of VK5AX. He became world famous for his work in connection with the Royal Flying Doctor Service and particularly for his invention of the "pedal radio".

Alf Traeger was brought up in the country area around the town of Balaklava, however, until now there has been nothing in that area to specifically mark the history concerning this well-known pioneer in radio development.

So as to rectify that situation action was taken by several people to have a memorial made which will allow recognition of Alf Traeger's achievements. This effort will come to fruition on Tuesday 26 January, which also happens to be Australia Day.

As part of the Wakefield Regional Council celebration of this National Day the memorial, which will be located in "The Triangle", a park area in the centre of the town of Balaklava, will be unveiled by the Honourable Neil Andrew, Member for Wakefield and Speaker of the House of Representatives. This ceremony will take place at 10.00am.

The memorial takes the form of a plaque and sundial. The plaque will carry on it the insignia of both the Royal Flying Doctor Service and of the Wireless Institute of Australia and includes a reference to both bodies with which Alf was connected.

The members of the VK5 Division moved that provide a donation of \$100 to be made towards production of the memorial. Acknowledgment of this donation has been received from the Wakefield Regional Council.

I have been invited, as Divisional President, to attend both this ceremony as well as an Australia Day Breakfast to be held at the "Balaklava Triangle"

commencing at 8.00am on that day. That will be a busy day for me what with the divisional monthly General Meeting also that same evening.

I would expect that in due course more details and perhaps even photographs from the two events described above would be available for publication.

FEBRUARY GENERAL MEETING

The format for the February General meeting will be somewhat changed from usual.

It is anticipated that for the evening we will be paying a visit to the Australian Broadcasting Corporation radio and television studios located at Collinswood, one of the inner eastern suburbs.

More details regarding this will be presented via the weekly Sunday news broadcasts, which I encourage you to listen to. I also point out that, if you miss the Sunday broadcasts there is a repeat each Monday evening on the 80 metre and 2 metre bands originating from here in Adelaide. Check the WIA Division Directory, page 56 for full details.

DIVISIONAL SECRETARY

I had announced in one of the Sunday broadcasts prior to Christmas the appointment of Merv Millar as Secretary of the Division.

Graham VK5EU had continued as Acting Secretary, however, he had been encountering some difficulties that did not allow him to do, in his opinion, full justice to the position.

Following the passing of Don VK5ADC we had coopted Merv VK5MX to the Divisional Council and he has gradually taken on the full duties of the Secretary position.

It would appear that inadvertently the listing for Secretary in the WIA Division Directory page in the January issue of this magazine was not correctly amended as requested to show this change.

We apologise to both Merv and Graham for this mistake which should now be rectified. We also offer our thanks to them both for their efforts on behalf of the Division and the hobby of Amateur Radio.

BURLEY GRIFFIN BUILDING

The ongoing saga regarding a new headquarters continues and I can see that my guess, in the January issue, of February or March for completion of the move was certainly optimistic.

We have an excellent relationship with the West Torrens Council. However, despite that fact some things take time to come to fruition. I will keep you posted as matters develop on this issue.

NEW CONSTITUTION AND AGM

Finally, I remind you that the Annual General Meeting will take place in April.

Adoption of a new constitution will be part of that AGM. There is more in the "Divisional Journal" insert in "Amateur Radio" this month.

The new Constitution is of major importance both for now and also for the future of both our division and our hobby. I ask that you ensure that you take part in both the debate and voting on this matter.

Best 73 to your from Ian VK5QX
Divisional President.

VK6 NOTES

NOTICE: WEST AUSTRALIAN DIVISION AGM FOR 1999

It is hereby notified that the Annual General Meeting of the Wireless Institute of Australia (Western Australian Division Inc.) will be held from 9am on Saturday 24 April 1999 prior to the 2nd Conference of Clubs which will possibly be followed by a BYO BBQ and a car boot sale.

The venue will be the RSL Hall on the corner of Fred Bell Parade and Playfield Street, East Victoria Park. The agenda will be:

1. Consideration of the Council's annual report
2. Consideration of the financial report
3. Consideration of other reports
4. Election of office-bearers (President, Vice President and seven other Councillors)
5. Election of two Auditors
6. Appointment of a Patron
7. General business which has been duly notified.

Notices of Motion for the AGM must

be received by the Secretary not less than 42 days prior to the meeting (ie by 13 March 1999), and must be signed by at least three members.

The Secretary's postal address is: PO Box 10, West Perth WA 6872.

Nominations of candidates for election to Council must be received by the Secretary, in writing, not less than 42 days prior to the meeting (ie by 13 March 1999), with an intimation that the candidate is willing to act.

A candidate may submit a statement, not exceeding 200 words, outlining his or her experience and case for election. Each nomination shall be signed by two members proposing the candidate.

Candidates must possess a current licence.

Any financial member who is entitled to vote may appoint a proxy, who must also be a financial member who is entitled to vote, to speak and vote on his or her behalf. Written notice of such proxy must be received by the Secretary prior to the meeting, and be in the following form:

I (full name), a member of the Institute hereby appoint (full name), also a member of the Institute, to act for me as my proxy, and in my name do all things which I myself being present could do at the meeting of the Institute held on 24 April 1999.

Signed:

Witness:

Date:

73 for February.

ar

Urunga Convention 1999

THE 2-METRE Pedestrian Fox Hunts at Urunga are well supported as the attached photograph clearly shows.

For fifty years amateurs have been coming to Urunga for their annual convention and the Fox Hunt has become one of their regular attractions.

What is encouraging is the range of contestants, both male and female with ages ranging from the very young to the very experienced!

Sounds like a lot of fun is had by all that attend.

This year is the fiftieth birthday of the convention and as any fifty-year-old would expect, there will be a birthday party in celebration.

The cutting of the cake will take place after dinner at the Ocean View Hotel, Urunga, so come along and

celebrate with the troop at Urunga.

Bring your Fox Hunting gear and test your skills against the locals. (If you are a local then don't let your neighbours down, pride is at stake!)

Urunga claim to have devised many of the fox hunt contests that we currently enjoy so here's their chance to prove it and your chance to join in.

See you at Urunga, 3rd and 4th April 1999.

Best 73's Brian Slarke VK2ZCQ

**For more information and
accommodation information
call Brian after 8:00pm on (02)
6655 1115.**



The contestants line up for their chance at the Urunga 1998 Convention

CONTESTS

Ian Godsill VK3DID

Federal Contests Coordinator

56 Nepean Hwy, Aspendale Vic. 3195 vk3did@eudoraimail.com

1998 RD Contest Results

Big Win by VK7 Division

Contest Calendar

February - April 1999

February

| | |
|-------|---|
| 13 | Asia-Pacific CW Sprint (Jan 99) |
| 13/14 | PACC DX Contest (CW/Phone) (Jan 99) |
| 19/21 | CQ 160 Metres SSB Contest (Dec 98) |
| 20/21 | ARRL DX CW Contest (Jan 99) |
| 27/28 | RSGB 7 MHz CW Contest (Jan 99) |
| 27/28 | Jock White Memorial Field Day (CW/Phone) (Jan 99) |
| 27/28 | UBA (Belgium) CW DX Contest |
| 27/28 | REF (France) SSB DX Contest (Dec 98) |
| 28 | High Speed Club CW Contest (Jan 99) |

MARCH

| | |
|-------|--|
| 6/7 | ARRL DX SSB Contest (Jan 99) |
| 13/14 | Commonwealth Contest (CW) (Feb 99) |
| 20/21 | WIA John Moyle Field Day (Feb 99) |
| 20/21 | DARC HF SSTV Contest |
| 20/21 | Bermuda Contest (Feb 99) |
| 20/21 | Russian DX Contest (CW/Phone) (Feb 99) |
| 27/28 | CQ WPX SSB Contest (Feb 99) |

APRIL

| | |
|-------|--------------------------------------|
| 3/4 | SP DX Contest (CW/Phone) |
| 9/11 | JA DX CW Contest (High Band) |
| 10/11 | International HF Grid Square Contest |
| 10/11 | EA DX Contest (CW/Phone) |
| 17/18 | SARTG AMTOR Contest |
| 17/18 | Holyland DX Contest (CW/Phone) |
| 24/25 | Helvetia DX Contest (CW/Phone) |
| 24/25 | SP RTTY Contest |

Thanks this month to VK3KWA, VK6APK, RSGB, SM3CER

THE VK7 DIVISION has done it again. Congratulations to all the members of that division who put in the effort to secure the title for 1998. Despite a substantial drop in the HF score, they have increased their lead over their nearest rivals.

The runner up, the VK2 Division was very unlucky not to be the next titleholder. They were the most consistent, registering good improvements in both HF and VHF activity.

One thing that was apparent again this year was the need to clarify or change rule 9 that relates to multi operator stations. It states, in part: 'only one person may operate at any time, ie no multi transmission.'

As we can all appreciate, this rule is impossible to police and I am actually at a loss to explain why the rule even exists.

To me, anything that promotes activity and participation is very much in the spirit of the contest and should be encouraged.

Most contests in the world allow for multi-operator/multi-transmitter entries and I don't see any reason why the RD should be excluded. I will endeavour to have it rectified in the rules for next year.

I received detailed reports of some stations not operating within the spirit of the contest, ie contacting only one station to the exclusion of all others in the contest and simultaneous transmissions by one operator on two or more bands.

I have noted these reports and have carefully scrutinised the affected logs. I have disallowed contacts where this abuse of the rules was apparent and adjusted the scores appropriately.

At my discretion, I did not disqualify these entrants. They are however, ineligible for certificates. I am confident that the situation will not occur again in the future.

Looking at this year's divisional scores and the benchmarks for next year,

it can be seen that the all divisions have an excellent chance of taking out the prize next year.

Divisional Scores

The method used to determine the winning division using 'Benchmarks' and 'Improvement Factors' was published with the rules in Amateur Radio July 1998, starting on page 27.

Readers who wish to do their own calculations are referred to that issue of the magazine.

Table 1 shows the placing of each division along with their overall Improvement Factors.

Table 1: Divisional Ladder

| | | |
|-----|-------|-------|
| 1st | VK7 | 3.543 |
| 2nd | VK2 | 1.276 |
| 3rd | VK5/8 | 1.043 |
| 4th | VK6 | 0.770 |
| 5th | VK4 | 0.689 |
| 6th | VK1 | 0.511 |
| 7th | VK3 | 0.449 |

The total scores in both HF and VHF are shown in Table 2.

Table 2: Divisional Scores

| Div'n | HF | VHF |
|-------|------|------|
| VK1 | 694 | 44 |
| VK2 | 5513 | 95 |
| VK3 | 2775 | 3145 |
| VK4 | 3640 | 317 |
| VK5/8 | 3890 | 1416 |
| VK6 | 3297 | 3016 |
| VK7 | 1331 | 1215 |

The above totals were used in the calculation of the Improvement Factors, which determined the winning division. They were also used in the calculation of the Benchmarks to be used for next year's contest.

These Benchmarks, which are shown in Table 3, are the scores that must be surpassed by each division in order to register an improvement. They will be published again with the rules in July 1999.

Table 3: 1999 Benchmarks

| Div'n | HF | VHF |
|-------|------|------|
| VK1 | 783 | 206 |
| VK2 | 4639 | 79 |
| VK3 | 4004 | 9558 |
| VK4 | 3372 | 965 |
| VK5/8 | 3782 | 1368 |
| VK6 | 3044 | 6063 |
| VK7 | 1778 | 446 |

Results ARI International DX Contest 1998 (Call/callscore)

VK2APK SO-MIX 358110

Results CQ-M International DX Contest 1998 (Posn/Call/CallScore)

10 VK2APK SO-MIX 129948

Individual Scores

The individual scores for entrants are listed below. Certificate winners are denoted by an asterisk (*) and the top Australian scores in each section by a hash (#).

This year, for the first time, certificates will be issued to both the top single operator and top multi-operator stations in each division.

| | | |
|------------------|------|---------|
| VK1 | | |
| HF Phone | | |
| HK | 136* | DID 138 |
| DW | 83 | II 104 |
| 7HK/1 | 20 | RJ 100 |
| KMA | 18 | AZR 90 |
| | | PH 88 |
| | | CW 74 |
| HF CW | | |
| AU | 240* | BO 431* |
| | | ZL 348* |
| HF Open | | |
| PK | 197* | EP 104 |
| VHF Phone | | |
| DW | 26* | IBT 42* |
| KMA | 18 | HT 18 |
| | | ZL 18 |
| | | UAI 17 |

| | | |
|-----------------|-------------|--|
| VK2 | | |
| HF Phone | | |
| XN | 396* | |
| CM | 313 | |
| DCL | 272* | |
| SHA | 259 | |
| ARJ | 286 | |
| PB | 235 | |
| XT | 203 | |
| CAA | 154 | |
| AGF | 116 | |
| VG | 107 | |
| APP | 84 | |
| KQ | 75 | |
| IBT | 69 | |
| LEE | 47 | |
| TG | 46 | |
| ALZ | 44 | |
| FY | 41 | |
| IV | 38 | |
| DDW | 36 | |
| WI | 33 | |
| GCE | 24 | |
| SW | 23 | |
| HT | 18 | |
| KCO | 15 | |
| CF | 13 | |
| DDB | 11 | |
| HF CW | | |
| KM | 296* | |
| OI | 210 | |
| BHO | 206 | |
| EL | 200 | |
| QF | 186 | |
| VK3 | | |
| HF Phone | | |
| SAY | 301* | |
| IO | 300* | |
| AHY | 144 | |
| CB | 121 | |
| GH | 105 | |
| EX | 96 | |
| JK | 65 | |
| KQB | 58 | |
| KTO | 52 | |
| ABP | 50 | |
| BWT | 50 | |
| EST | 47 | |
| ALD | 42 | |
| DY | 42 | |
| DS | 40 | |
| DVT | 36 | |
| ATJ | 29 | |
| BLZ | 26 | |
| ADW | 21 | |
| GHA | 21 | |
| GK | 17 | |
| AAJ | 16 | |
| CAM | 12 | |
| HF CW | | |
| APN | 242* | |
| SV | 164 | |
| XB | 96 | |
| AMD | 46 | |
| JL | 44 | |
| VB | 44 | |
| OZ | 28 | |

| | |
|------------------|------|
| KS | 23 |
| HF OPEN | |
| DID | 177* |
| VHF Phone | |
| GUS | 629# |
| SAA | 594* |
| DBQ | 319* |
| MBD | 233 |
| KTO | 214 |
| HLP | 202 |
| JK | 155 |
| XBA | 129 |
| AYF | 117 |
| GPT | 115 |
| GK | 114 |
| BGS | 67 |
| XJU | 50 |
| CAM | 50 |
| GH | 47 |
| MGZ | 34 |
| AJJ | 22 |
| 4PJ/3 | 22 |
| XH | 20 |
| DID | 12 |

| | |
|-----------------|------|
| VK4 | |
| HF Phone | |
| BAY | 205* |
| EJ | 92 |
| BTW | 77 |
| JAL | 68 |
| JAE | 64 |
| ACW | 56 |
| PF | 55 |
| AWL | 45 |
| 4PJ/3 | 35 |
| QF | 30 |
| EHT | 28 |
| AO | 26 |
| DV | 25 |
| LUV | 22 |
| BSH | 20 |
| WJG | 16 |
| EV | 11 |
| OE | 8 |
| HF CW | |
| XA | 316* |
| LV | 266 |
| LP | 210 |
| XW | 186 |
| XY | 176 |
| CI | 146 |
| COZ | 114 |
| RE | 54 |
| HF Open | |
| EMM | 456* |
| LT | 284 |
| DB | 248 |

| | |
|------------------|------|
| GZ | 120 |
| ZA | 104 |
| AJH | 77 |
| VHF Phone | |
| ZBV | 129* |
| EHT | 54 |
| ZA | 43 |
| OE | 31 |
| BAY | 29 |
| AO | 13 |
| JAE | 7 |
| LUV | 6 |
| AWL | 5 |

| | |
|-----------------|------|
| VK5/8 | |
| HF Phone | |
| EN | 361* |
| ARC | 322* |
| 8DA | 237 |
| BWH | 229 |
| BQ | 228 |
| ZDW | 212 |
| EE | 169 |
| GRC | 112 |
| UE | 71 |
| AFZ | 55 |
| RK | 24 |
| TW | 23 |
| KJT | 19 |

| | |
|----------------|-------|
| HF CW | |
| 8HA | 218* |
| XE | 204 |
| HO/4 | 16 |
| HF Open | |
| BRC | 641*# |
| ATU | 380* |
| GZ | 308 |
| UQ | 61 |

| | |
|------------------|------|
| VHF Phone | |
| ARC | 484* |
| BRC | 447 |
| AR | 202* |
| GRC | 174 |
| KLD | 50 |
| KIA | 31 |
| BQ | 20 |
| KMI | 5 |
| TW | 3 |
| SWL | |
| JAZ | 128* |

| | |
|-----------------|-------|
| VK6 | |
| HF Phone | |
| SZ | 551*# |
| CSW | 203* |

| | |
|------|-----|
| VX | 131 |
| JP | 118 |
| DDX | 113 |
| ADI | 97 |
| CD | 95 |
| PM | 63 |
| PX | 60 |
| BIK | 57 |
| KG | 56 |
| SAR | 52 |
| KH | 49 |
| AR | 44 |
| ER | 35 |
| KZ/5 | 29 |
| YF | 25 |
| WU | 19 |
| PO | 12 |

| | |
|--------------|------|
| HF CW | |
| AFW | 208* |
| VZ | 164 |
| AJ | 136 |
| WZ | 26 |

| | |
|----------------|------|
| HF Open | |
| GW | 299* |
| CF | 291 |
| RU | 163 |
| JS | 112 |
| WT | 61 |
| HK | 28 |

| | |
|------------------|------|
| VHF Phone | |
| ZDW | 342* |
| ANC | 297* |
| FJA | 187 |
| HU | 181 |
| SAA | 181 |
| SAR | 150 |
| JP | 133 |
| DS | 132 |
| HAQ | 132 |
| BDO | 130 |
| AR | 122 |
| MCB | 120 |
| YF | 112 |
| AD | 94 |
| ZDS | 80 |
| RO | 75 |
| KG | 75 |
| CSW | 67 |
| PX | 60 |
| TS | 60 |
| MIN | 57 |
| XH | 45 |
| KTN | 43 |

| | |
|----|----|
| CX | 41 |
| BW | 24 |
| PO | 22 |
| VX | 20 |
| WT | 20 |
| GA | 14 |

| | |
|-----------------|------|
| VK7 | |
| HF Phone | |
| CK | 411* |
| RN | 245 |
| JGD | 162 |
| NDO | 132 |
| DG | 109 |
| JP | 52 |
| RM | 50 |
| RR | 39 |
| KC | 28 |
| BM | 10 |

| | |
|------------------|------|
| VHF Phone | |
| ZBX | 200* |
| DG | 156 |
| FB | 151 |
| JGD | 129 |
| RR | 127 |
| KV | 95 |
| EB | 75 |
| RM | 70 |
| RB | 63 |
| KC | 37 |
| NDO | 37 |
| NGC | 28 |
| HJ | 26 |
| LS | 21 |

OVERSEAS ENTRIES

Thanks go out once again to the overseas entrants for their participation and help in making the contest the success it is.

HF Phone

ZL3TX 176*
ZL1AGO 15

| | |
|--------------|------|
| HF CW | |
| ZL4GU | 278* |
| ZL1ASZ | 158 |

That's it for another year.
73 and good luck in 1999.
Aleks Petkovic, VK6APK
E-Mail vk6apk@eon.net.au

CONTESTS

RUSSIAN DX CONTEST

1200 Sat - 1200z Sun, 20/21 March
Bands: 160 - 10 m (no WARC).
Sections: Single Operator; CW, Phone,
Mixed; single or all bands. Modes: CW,
SSB. Exchange RS(T) plus serial number
starting with 001.

Russian stations will send serial
number plus two-letter Oblast code (max
88 + 3 on each band). Score 10 points
per Russian QSO, five points for QSOs
with stations on another continent, three

points for stations in the same continent
and two points with your own country.
Continents are as per WAC.

Final score is total QSO points by
number of DXCC countries and Russian
Oblasts worked on each band. Send logs
and summary sheets postmarked by 16
April 1999 to: Contest Committee SRR,
PO Box 59, 105122 Moscow, Russia.

Oblast designators are:

AB AD AL AM AO AR BA BO
BR BU CB CK CN CT CU DA
EA EW GA HA HK HM IR IV
JA JN KA KB KC KE KG KI
KJ KK KL KM KN KO KP KR
KS KT KU LO LP MA MD MG
MO MR MU NN NO NS NV
OB OM OR PE PK PM PS
RA RO SA SL ST SM SO SP
SR SV TA TB TL TM TN TO
TU TV UD UL UO VL VG VO
VR YA.

SPRING VHF-UHF FIELD DAY 1998: RESULTS

John Martin VK3KWA,
contest manager

THE INAUGURAL Spring Field Day
went very well, especially considering
that it was announced at very short notice.
There were no multi-operator entries,
probably for this reason.

Once again VK3 dominated the logs,
and again VK6 was conspicuous by its
absence.

The logs reveal a number of contacts
over 600 km, both on 2 metres and 70
cm. There were also some interstate
contacts on 1296 MHz and a total of 18
stations active on this band.

Many of the logs had to be re-scored,
in most cases because entrants forgot to
claim credit for the grid square they were
operating in. Something to remember for
next time.

RESULTS

Speaking of remembering, Rod
VK2TWR almost forgot to send his log
in. It is just as well that he eventually
got around to it, because he is the overall
winner. Congratulations Rod.

In Section A, Barry VK3BJM came a
close second. The winner of Section B
was Ralph VK3WRE by a big margin,
and Max VK3TMP came first in Section
D with an equally big margin.

Congratulations all round, and also
to all other entrants for making this
inaugural Spring Field Day a success.

COMMENTS

Some comments and suggestions from
the logs:

*"I found it harder to work stations on
6 than on 2. The multiplier should be the
same for both bands".*

"I did not hear anyone on FM".

*"A good contest. Should be repeated,
possibly a week earlier to avoid clashing
with the ALARA contest".*

*"Early December might be a more
reliable time for both weather and
propagation".*

*Other suggestions were that the repeat
contact limit should be two hours rather
than three; that the duration should be any
24 consecutive hours out of 26; and that
6 metres should be dropped (here we go
again)! Any comments on these points
would be much appreciated.*

SECTION A - PORTABLE, SINGLE OPERATOR, 24 HOURS

| Call | Name | Grid | 50 MHz | 144 MHz | 432 MHz | 1.2 GHz | 2.4 GHz | TOTAL |
|--------|-------------|------------|--------|---------|---------|---------|---------|-------|
| VK2TWR | R. Collman | QF43 | 117(8) | 832(14) | 994(9) | 430(2) | - | 2373 |
| VK3BJM | B. Miller | QF23 | 85(6) | 940(16) | 777(8) | 500(3) | - | 2302 |
| VK4OE | D. Friend | QG50, QF59 | - | - | 336(2) | - | 429(1) | 765 |
| VK2XCI | N. McMillan | QF27 | - | 536(10) | - | - | - | 536 |

SECTION B - PORTABLE, SINGLE OPERATOR, 6 HOURS

| Call | Name | Grid | 50 MHz | 144 MHz | 432 MHz | 1.2 GHz | 2.4 GHz | TOTAL |
|--------|------------|------|--------|---------|---------|---------|---------|-------|
| VK3WRE | R. Edgar | QF31 | 88(6) | 432(6) | 651(6) | 770(5) | 299(1) | 2240 |
| VK3AFW | R. Cook | QF33 | 80(6) | 632(12) | - | - | - | 712 |
| VK3KAI | P. Freeman | QF31 | - | - | 147(1) | 220(1) | 286(1) | 653 |
| VK5ZUC | A. Russell | PF95 | 21(1) | 172(3) | 147(1) | - | - | 340 |
| VK3YE | P. Parker | QF22 | - | 280(4) | - | - | - | 280 |

SECTION D - HOME STATION, 24 HOURS

| Call | Name | Grid | 50 MHz | 144 MHz | 432 MHz | 1.2 GHz | 2.4 GHz | TOTAL |
|--------|--------------|------|--------|---------|---------|---------|---------|-------|
| VK3TMP | M. Pickering | QF21 | 35(2) | 544(11) | 791(9) | 330(2) | - | 1700 |
| VK7JG | J. Gelston | QE38 | 36(2) | 356(4) | 252(2) | 220(1) | - | 864 |
| VK1WJ | W. Jirgens | QF44 | 51(3) | 252(4) | 371(3) | - | - | 674 |
| VK3CAT | T. Middleton | QF22 | 58(4) | 388(6) | - | - | - | 446 |
| VK4PJ3 | P. Brown | QF22 | - | 184(3) | - | - | - | 184 |

Numbers in brackets are the numbers of locator squares worked on each band.

CONTESTS

CQ WPX CONTEST

SSB: 0001z Sat - 2400z Sun 27/28 March

CW: 0001z Sat - 2400z Sun 29/30 May

OBJECT IS TO contact as many stations worldwide as possible on bands: HF (no WARC).

Categories: single operator (single or all-band), subdivided according to power (unrestricted, low power max 100 w o/p and QRPp max 5w o/p); multi-operator (single or multi-tx, all bands only). Single operator stations are where one person performs all operating, logging and spotting functions.

Note: single operators may only work for 36 of the 48 hours. Off periods must be at least one hour and clearly marked in the log. No time limits apply to multi-operator stations.

Multi-multi stations must have all txs located within a 500-m diameter circle or within the property limits of the licensee's address, whichever is the greater. All antennae must be physically connected by wires to the station txs and rx's.

Exchange RS(T) plus a three-digit number starting at 001. Continue to four digits if past 999. Multi-tx stations must use separate numbers for each band.

Score three points (20/15/10 m) or six points (160/80/40 m) for contacts with stations on different WAC continents, and one point (20/15/10 m) or two points (160/80/40 m) for contacts with stations within same WAC boundary.

Contacts with stations in same country are permitted for multiplier credit, but have zero point value.

Multiplier is the total number of prefixes worked on all bands (each prefix counted once only regardless of the number of different bands on which it is worked). Final score is QSO points X multiplier.

Logs must show times in UTC, with breaks clearly marked. Show prefix multipliers first time they are worked.

Logs should be checked for duplicates, correct points and prefix multipliers. Logs must be accompanied by a sorted alphanumeric list of prefix multipliers and a summary sheet showing call, name, address, category, power, scoring information and a signed

declaration that all contest rules and radio regulations were observed.

Send logs by disk. CT's *.bin file or *.all file; N6TR's *.dat file; NA's *.qdf file or *.dbf files are preferred. ASCII file containing all information is acceptable.

Disk files must be in chronological order for single operator and multi-single stations, and chronological order by bands for multi-multi stations.

Please label disks and name your files with the call used (eg VK3DID.BIN or VK3DID.DAT). Disks will be required from top-scoring stations. Logs may also be submitted via e-mail to:

sdb@ag9v.ampr.org or
n8bjq@erinet.com. Logs received via e-mail will be confirmed upon receipt. Send logs no later than 7 May (SSB) or 9 July (CW) above, or to: WPX Contest, 76 N Broadway, Hicksville, NY 11801, USA. Indicate SSB or CW on envelope.

To be eligible for awards, single operator stations must show at least 12 hours operation and multi-operator stations must show at least 24 hours operation.

Single band entries showing points for more than one band will be judged as multi-band unless otherwise specified.

COMMONWEALTH CONTEST 1999

1200z Sat - 1200z Sun, 13/14 March

OBJECT IS TO promote contacts between stations in the Commonwealth and Mandated Territories.

Category: Single Operator only. **Sections:** Open (no limit on operating time), and Restricted (operation limited to 12 hours; off periods must be clearly marked and at least one hour each; at least four hours' operation must take place after 0000z on 14 March. Operate in lowest 30 kHz of each band, except when contacting Novice stations operating above 21030 and 28030 kHz.

Exchange RST plus serial number. Any station using a Commonwealth Call Area prefix may be worked, except those within the entrant's own call area. Note that for this contest, the entire UK counts as ONE call area. Score five points per valid QSO, plus a bonus of 20 points for each of the first three contacts with each Commonwealth Call Area, on each band.

A number of Commonwealth Society HQ stations will be active during the contest, and will send 'HQ' after their serial number to identify themselves. Every HQ station counts as an additional call area, and entrants can contact their own HQ station for points and bonuses.

Separate logs and lists of bonuses

are required for each band. Entries must be accompanied by a summary sheet indicating the section entered, and scores claimed on each band. Send logs postmarked by 6 April 1999 to: RSGB HF Contest Committee, c/o S V Knowles, 77 Bensham Manor Road, Thornton Heath, Surrey, CR7 7AF, UK. Awards of the Senior and Junior Rose Bowls will be made to the winners of the Open and Restricted categories respectively, and Certificates of Merit to runners-up.

Commonwealth Call Areas are:

3B6 3B8 3B9 3DA 4S 5B 5H 5N 5W
5X 5Z 6Y 7P 7Q 8P 8Q 8R 9G 9H 9J
9L 9M 9M2 9M6/8 9V 9Y A2 A3 AP
C2 C5 C6 C9 CY0 CY9 G/GB/GD/GI/
GJ/GM/GU/GW (all one area) h4 J3 J6
J7 J8 P2 S2 S7 T2 T30 T31 T32 T33
TJ V3 (Antigua, Barbuda) V3 (Belize) V4
V5 V8 VE1 VE2 VE3 VE4 VE5 VE6
VE7 VE8 VE9 VK0 (Heard) VK0
(Macquarie) VK1/2/3/4/5/6/7/8 VK9C/L/M/
N/W/X VO1 VO2 VP2E VP2M VP2VVP5
VP8 (Antarctica) VP8 (Falkland) VP8 (S.
Georgia) VP8 (S. Sandwich) VP8 (S.
Shetland) VP8 (S. Orkney) VP9 VQ9 VR6
VU VU4 VU7 VY1 VY2 YJ Z2 ZB2 ZC4
ZD7 ZD8 (Tristan da Cunha) ZD8
(Ascension) ZF ZK1 (N. Cook) ZK1 (S.
Cook) ZK2 ZK3 ZL0/1/2/3/4/7/8/9 ZS1/2/
4/5/6/8 GB5CC (RSGB
HQ) (various other HQ).

Thanks and 73 de Ian VK3DID

1999: 20/21 March,

0100z Sat - 0059z Sunday

OVERVIEW

- The aim is to encourage and provide familiarisation with portable operation and provide training for emergency situations. The rules are therefore designed to encourage field operation.
- The contest takes place on the third full weekend in March each year and runs 0100 UTC Saturday to 0059 UTC Sunday. 1999: 20/21 March.
- Contest is open to all VK, ZL and P2 stations. Other stations are welcome to participate, but can only claim points for contacts with VK, ZL and P2 stations.
- Single operator portable entries shall consist of one choice from each of the following:
 - 24 or six hours
 - Phone, CW or Open mode
 - HF, VHF/UHF, All Band
- Multi-operator portable entries shall be Open Mode and consist of one choice from each of the following: -
 - 24 or six hours
 - HF, VHF/UHF, All Band
- Home and SWL entries may be either 24 or six hours, Open-mode, all-band.

SCORING

- Portable HF stations shall score two points per QSO.
- Portable stations shall score the following on 6m: -
 - 0-49 km, 2 points per QSO.
 - 50-99 km, 10 points per QSO.
 - 100-149 km, 20 points per QSO.
 - 150-199 km, 30 points per QSO.
 - 200-499 km, 50 points per QSO.
 - 500 km and greater, 2 points per QSO.
- Portable station shall score the following on 144 MHz and higher:
 - 0-49 km, 2 points per QSO
 - 50-99 km, 10 points per QSO
 - 100-149 km, 20 points per QSO
 - 150 km & greater, 30 points per QSO.
- For each VHF/UHF QSO where more than two points are claimed, both latitude and longitude of the station contacted or other satisfactory proof of distance must be supplied.
- Home stations shall score:
 - Two points per QSO with each portable station
 - One point per QSO with other home stations

LOG SUBMISSION

- Logs must be accompanied by a summary sheet showing: callsign, name, mailing address, section entered, number of contacts, claimed score, location of the station during the contest, equipment used and a signed declaration stating "I hereby

certify that this station was operated in accordance with the rules and spirit of the contest." For multi-operator stations, the names and callsigns of all operators must be listed.

- Logs must be sent by mail no later than 26 April 1999, to: John Moyle Contest Manager, 108 Queensport Road, Murarrie, 4172, Australia. An ASCII copy on 3.5" disk would be helpful. Also logs may be sent by e-mail to: <esr@powerup.com.au> Logs sent by e-mail must include a summary sheet and declaration, but operator's name is acceptable in lieu of a signature.

CERTIFICATES AND TROPHY

- At the discretion of the Contest Manager, certificates will be awarded to the winners of each portable section. Additional certificates may be awarded where operation merits it. Note that entrants in the 24 hours section are ineligible for awards in the six hours section.
- The Australian portable station with the highest CW score will be awarded the President's Cup.

DISQUALIFICATION

- General WIA contest disqualification criteria apply to entries in the contest. Logs that are unintelligible or excessively untidy are also liable to be disqualified.

DEFINITIONS

- A portable station comprises field equipment operating from a power source independent of any permanent facilities. eg batteries, portable generator, solar power, wind power etc.
- Equipment comprising the portable station must be located within an 800-metre diameter circle.
- A single operator station is where one person performs all operating, logging and spotting functions.
- A single operator may only use a callsign of which he/she is the official holder. A single operator may not use a callsign for which he/she is a sponsor except as part of a multi-operator entry.
- A multi-operator station is where more than one person operates, checks for duplicates, keeps the log, engages in spotting, etc.
- A multi-operator station may use only one callsign during the contest.
- A multi-operator station may only use one transmitter or a given band at any one time, regardless of the mode used.
- A multi-operator station must use a separate log for each band.
- A station operated by a club, group or

organisation will be considered to be multi-operator by default.

- None of the portable field equipment may be erected on the site more than 28 hours before the beginning of the contest.
- Single operator stations may receive moderate assistance prior to and during the contest, except for operating, logging and spotting. Massive logistic support by clubs, etc, is totally against the spirit of the contest and may result in disqualification and, at the discretion of the Manager, may be banned from this contest for up to three years.
- Phone includes SSB, AM and FM.
- CW includes CW, RTTY and Packet.
- It is not expected that any other modes will be used in the contest, but if they are they shall be classed as CW.
- All HF amateur bands except WARC may be used. VHF/UHF means all amateur bands above 30 MHz. Note: on 6 m the region below 50.150 MHz has been declared a contest-free zone; contest CQs and exchanges must take place above this frequency. Stations violating this rule will be disqualified.
- Cross-band, cross-mode and contacts made via repeaters are not permitted for contest credit. However, repeaters may be used to arrange a contact on another frequency, providing that a repeater is not used for the actual contact.
- Stations may make repeat contacts and claim full points for each one. For this purpose, the contest is divided into eight consecutive three-hour blocks: 01-0359; 04-0656; 07-0959; 10-1259; 13-1559; 16-1859; 19-2159; 22-0059 UTC. If you work a station at 0359 UTC, a repeat contact may be made after the start of the new block, providing they are not consecutive or are separated by five minutes since the previous valid contact with that station on the same band and mode.
- Exchange RS(T) plus a three-digit serial number commencing at 001 and incrementing by one for each contact.
- Portable stations must indicate that they are portable by sending their callsigns followed by "P", eg 569003P.
- Multi-operator stations must use a separate log for each band and commence each band with 001.
- Receiving stations must record the exchanges sent by both stations. QSO points will be on the same basis as Home Stations, unless the receiving station is portable.
- For all stations, the period of operation commences with the first contact on any band or mode, and finishes six or 24 hours later. There will be no exceptions to this rule.

AWARDS

John Kelleher VK3DP

Federal Awards Officer

4 Brook Crescent, Box Hill South, Vic 3128 (03) 9889 8393

MUCH HAS BEEN mentioned, and I have had numerous queries about GCR lists.

Firstly, the letters GCR stand for General Certification Rules.

Most of the award sponsors allow a GCR list in lieu of wanting to see your cards; but you need to hold the actual QSL cards as verification of your DXCC contacts.

GCR usually means getting the signatures of two witnesses, who certify that you possess the cards, and that the information on the application is correct.

If the award rules specify Club officials you should make sure that their titles follow their signatures; include the name of the club just to be sure.

Some sponsors (a tiny minority) actually want to see the cards for themselves. - If you want the award, you are going to have to risk the possible loss of your cards. I've never lost any cards in the mail; but then again, I didn't rest easy until they were returned.

QSL Cards

On the subject of QSL cards, here are some handy hints about their design.

- (1) Maximum size of each card should not exceed 3.5 in. (9 cm) X 5.5 in. (14 cm).
- (2) Thickness should be about that of a normal business card.
- (3) Your cards should be reasonably attractive. Pictures are great, but not necessary.
- (4) Your cards should contain all of the QSO data, in a clear and logical format.
- (5) Show the contact time in UTC and please be accurate.
- (6) Finally, and where possible, indicate on your card what awards YOUR card is good for!

Try to ascertain the actual path to adopt to obtain THEIR QSL card, whether direct, or via a manager, or simply via "the bureau".

Booklets are available, (usually free) from your local Post Office, showing the existing Air and surface mail charges to almost anywhere in the world. !

Special Event Station

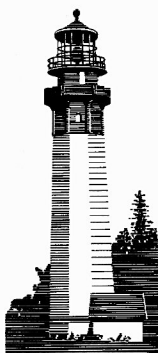
The NZART Official Station call sign ZL6A will be used for 24 hours on ANZAC day in New Zealand. It will be used on all bands and modes.

Date and times: 24 April 1999 1200 UTC to 25 April 1999 1200 UTC.

QSL cards will be sent on receipt of your QSL card. Send cards via the bureau. Alternately, cards may be sent, with a SAE and one IRC or US\$1.00 (for postal costs only) directly to: Bob Pearce ZL2GJ, 3 Strasbourge Street, and Martinborough 5954 New Zealand.

NZART Guiding Light Award

This is a new award, which requires contacts with stations within 30 km of the



more remote lighthouses and 10-Km of the lighthouses near cities.

Depending on the degree of difficulty each lighthouse has been allocated 1 to 5 points.

A total of 20 points are required for the basic "Mariners" Award, and 50 points for the "Master Mariners" Award.

The lighthouses are:

NORTH ISLAND

| | Points | Km |
|---------------------|--------|----|
| 1. Cape Reinga | 2 | 30 |
| 2. Cape Brett | 1 | 30 |
| 3. Mokohinau | 5 | 30 |
| 4. Cuvier Island | 3 | 30 |
| 5. Tiritiri Matangi | 1 | 10 |
| 6. Bean Rock | 1 | 10 |
| 7. East Cape | 2 | 30 |
| 8. Portland Island | 2 | 30 |
| 9. Castlepoint | 2 | 30 |
| 10. Cape Palliser | 2 | 30 |
| 11. Baring Head | 1 | 10 |
| 12. Pencarrow | 1 | 10 |
| 13. Somes Island | 1 | 10 |
| 14. Cape Egmont | 1 | 30 |

SOUTH ISLAND

| | | |
|---------------------|---|----|
| 15. Cape Foulwind | 1 | 30 |
| 16. Kahurangi Point | 3 | 30 |
| 17. Farewell Spit | 2 | 30 |
| 18. Boulder Bank | 1 | 10 |
| 19. Stephens Island | 5 | 30 |
| 20. The Brothers | 2 | 30 |
| 21. Cape Campbell | 1 | 30 |
| 22. Godley Head | 1 | 10 |
| 23. Akaroa | 1 | 30 |
| 24. Moeraki | 1 | 30 |
| 25. Taiaroa Heads | 1 | 10 |
| 26. Cape Saunders | 1 | 10 |
| 27. Nugget Point | 2 | 30 |
| 28. Waipapa Point | 2 | 30 |
| 29. Dog Island | 1 | 30 |
| 30. Centre Island | 1 | 30 |
| 31. Puysegur Point | 5 | 30 |

This Award is open to all amateurs and SWL's.

Eligible contacts for this award must date from 1st November 1998 and after. Fees are A\$5.00 or 5 IRC. Applications and log sheets available from:

NZART Awards Manager ZL3GX
PO Box 1733
Christchurch 8015
New Zealand.

The ZL1FND Far North

Avocado Festival Award.

I must apologise due to limited space, I cannot include the information.

DXCC LISTINGS WEF **31ST DECEMBER 1998**

Roll of Honour SSB

| | | |
|-----|--------|---------|
| 1. | VK5MS | 330/384 |
| 2. | VK5WO | 330/363 |
| 3. | VK3QI | 330/344 |
| 4. | VK3DYL | 330/336 |
| 5. | VK4LC | 329/376 |
| 6. | VK1ZL | 328/334 |
| 7. | VK6LK | 327/352 |
| 8. | VK3AKK | 327/338 |
| 9. | VK4OH | 327/334 |
| 10. | VK2FGI | 326/332 |
| 11. | VK6RU | 325/380 |
| 12. | VK6HD | 325/350 |
| 13. | VK5XN | 324/345 |
| 14. | VK4UA | 324/338 |
| 15. | VK3AMK | 321/340 |
| 16. | VK6NE | 321/337 |
| 17. | VK5EE | 321/327 |
| 18. | VK3YJ | 320/326 |
| 19. | VK4AAR | 320/324 |
| 20. | VK2AVZ | 319/330 |
| 21. | VK7BC | 319/329 |
| 22. | VK2DEJ | 317/323 |
| 23. | VK3CSR | 316/325 |
| 24. | VK6VS | 315/319 |

SSB - Ordinary List

| | | |
|-----|--------|---------|
| 1. | VK6AJW | 312/317 |
| 2. | VK6APK | 310/315 |
| 3. | VK5WV | 306/326 |
| 4. | VK6PY | 306/312 |
| 5. | VK3JI | 304/319 |
| 6. | VK5FV | 304/307 |
| 7. | VK6RO | 302/308 |
| 8. | VK3IR | 295/298 |
| 9. | VK4DP | 293/305 |
| 10. | VK2WU | 291/296 |
| 11. | VK4BG | 286/302 |
| 12. | VK3CYL | 282/288 |
| 13. | VK4SJ | 278/279 |
| 14. | VK3DP | 264/267 |
| 15. | VK3GI | 263/267 |
| 16. | VK3VQ | 259/276 |
| 17. | VK5IE | 258/261 |
| 18. | VK4CY | 254/257 |
| 19. | VK4LV | 250/252 |
| 20. | VK3UY | 250/252 |
| 21. | VK4ICU | 249/251 |
| 22. | VK6ANC | 244/248 |
| 23. | VK2PU | 243/247 |
| 24. | VK3CIM | 242/246 |
| 25. | VK6YF | 238/241 |
| 26. | VK7TS | 237/238 |
| 27. | VK2CKW | 234/237 |
| 28. | VK6APW | 228/229 |

| | | |
|-----|--------|---------|
| 29. | VK3DS | 226/236 |
| 30. | VK4BAY | 226/229 |
| 31. | VK3ETM | 226/227 |
| 32. | VK3SM | 222/242 |
| 33. | VK4EJ | 219/221 |
| 34. | VK5BO | 217/222 |
| 35. | VK3DD | 213/217 |
| 36. | VK4XJ | 204/216 |
| 37. | VK3DVT | 201/204 |
| 38. | VK3EFT | 198/201 |
| 39. | VK4AU | 189/190 |
| 40. | VK6WJH | 183/- |
| 41. | VK2HV | 177/- |
| 42. | VK4IL | 176/- |
| 43. | WA1MKS | 171/- |
| 44. | VK6APH | 168/169 |
| 45. | LU5DSE | 161/- |
| 46. | VK4ARB | 159/160 |
| 47. | VK2NO | 157/- |
| 48. | VK4IT | 154/155 |
| 49. | VK4CHB | 152/153 |
| 50. | VK4EMS | 149/- |
| 51. | VK4DMP | 147/148 |
| 52. | VK2SPS | 141/143 |
| 53. | VK3DNC | 141/142 |
| 54. | VK6LC | 139/140 |
| 55. | VK2EQ | 139/- |
| 56. | VK2GSN | 135/- |
| 57. | VK6LG | 134/135 |
| 58. | VK2LEE | 130/132 |
| 59. | VK3DQ | 127/141 |
| 60. | TI2YLL | 127/- |
| 61. | YC8EMH | 126/127 |
| 62. | VK6ABS | 126/- |
| 63. | VK4BP | 126/- |
| 64. | VK4VIS | 124/126 |
| 65. | VK3TI | 122/125 |
| 66. | SM6PRX | 121/126 |
| 67. | HL4YD | 118/119 |
| 68. | VK7WD | 115/116 |
| 69. | VK5GZ | 113/115 |
| 70. | VK4NJQ | 111/115 |
| 71. | VK6NV | 111/113 |
| 72. | JA8XDM | 111/- |
| 73. | C21DJ | 109/- |
| 74. | JE9EMA | 108/- |
| 75. | VK5UO | 107/110 |
| 76. | HC2HYB | 106/107 |
| 77. | VK4LW | 105/- |
| 78. | JN6MIC | 103/104 |
| 79. | ZS6IR | 102/104 |
| 80. | KB2NEK | 102/103 |
| 81. | C21NJ | 102/- |
| 82. | VK2FZR | 102/- |
| 83. | VK4JAE | 102/- |
| 84. | JH3OHO | 101/103 |
| 85. | ON4BCM | 100/- |

Roll of Honour - CW

| | | |
|----|-------|---------|
| 1. | VK3QI | 330/342 |
| 2. | VK6HD | 323/344 |
| 3. | VK5WO | 318/344 |
| 4. | VK3XB | 315/350 |

Ordinary List - CW

| | | |
|-----|--------|---------|
| 1. | VK3KS | 302/330 |
| 2. | VK6RU | 275/319 |
| 3. | VK3JI | 271/296 |
| 4. | VK3AKK | 270/275 |
| 5. | VK4LV | 252/259 |
| 6. | VK2CWS | 239/241 |
| 7. | VK3DP | 237/240 |
| 8. | VK7BC | 234/243 |
| 9. | VK4ICU | 231/- |
| 10. | VK3DQ | 228/255 |
| 11. | VK4DA | 226/228 |
| 12. | VK3CIM | 219/220 |
| 13. | VK4DP | 205/216 |
| 14. | VK6MK | 202/204 |
| 15. | VK7RO | 201/204 |
| 16. | VK6PY | 190/194 |
| 17. | VK5GZ | 189/191 |
| 18. | VK4CY | 187/188 |
| 19. | VK6HW | 179/182 |
| 20. | VK7TS | 165/- |
| 21. | VK5UO | 164/165 |
| 22. | VK5BO | 159/184 |
| 23. | VK3DNC | 154/157 |
| 24. | VK4XJ | 150/163 |
| 25. | WA5VGI | 146/148 |
| 26. | VK4UA | 143/145 |
| 27. | VK4AAR | 139/141 |
| 28. | VK7DQ | 137/138 |
| 29. | VK2TB | 123/125 |
| 30. | VK3AGW | 119/120 |
| 31. | VK4CMY | 117/118 |
| 32. | SP1AFU | 112/113 |
| 33. | VK8KV | 112/113 |
| 34. | VK5BWW | 110/111 |
| 35. | VK6NV | 109/110 |
| 36. | OK1FED | 109/- |
| 37. | VK2FYM | 106/108 |
| 38. | VK3DG | 102/- |
| 39. | VK8XC | 101/103 |
| 40. | SM6PRX | 101/102 |

Roll of Honour - Open

| | | |
|----|--------|---------|
| 1. | VK5WO | 330/367 |
| 2. | VK3QI | 330/345 |
| 3. | VK4LC | 329/376 |
| 4. | VK3AKK | 327/338 |
| 5. | VK7BC | 327/336 |
| 6. | VK6RU | 325/380 |
| 7. | VK6HD | 325/351 |
| 8. | VK4UA | 324/340 |
| 9. | VK3JA | 323/371 |

| | | |
|-----|--------|---------|
| 10. | VK6AMK | 322/341 |
| 11. | VK2AVZ | 320/330 |
| 12. | VK4AAR | 320/324 |
| 13. | VK3XB | 317/347 |
| 14. | VK3UY | 316/319 |
| 15. | VK3JI | 315/344 |

Ordinary List - Open

| | | |
|-----|--------|---------|
| 1. | VK4DP | 309/323 |
| 2. | VK6PY | 308/316 |
| 3. | VK6RO | 308/314 |
| 4. | VK3DP | 303/307 |
| 5. | VK4DV | 301/316 |
| 6. | VK4BG | 293/312 |
| 7. | VK4CY | 289/293 |
| 8. | VK3CYL | 282/288 |
| 9. | VK3VQ | 274/291 |
| 10. | VK4LV | 272/279 |
| 11. | VK4ICU | 271/273 |
| 12. | VK3CIM | 266/270 |
| 13. | VK5BO | 264/301 |
| 14. | TF5BW | 260/264 |
| 15. | VK7TS | 253/254 |
| 16. | VK6ANC | 247/250 |
| 17. | VK5UO | 245/249 |
| 18. | VK2CWS | 245/247 |
| 19. | VK3DQ | 241/270 |
| 20. | VK6APW | 239/240 |
| 21. | VK2ETM | 238/240 |
| 22. | VK4XJ | 233/249 |
| 23. | VK4DA | 227/229 |
| 24. | WA5VGI | 216/218 |
| 25. | VK6MK | 209/211 |
| 26. | VK2EFT | 202/205 |
| 27. | VK5GZ | 198/200 |
| 28. | VK3DNC | 185/187 |
| 29. | VK2HV | 178/- |
| 30. | VK6NV | 172/173 |
| 31. | VK6APH | 171/172 |
| 32. | SM6PRX | 162/169 |
| 33. | VK4CHB | 160/162 |
| 34. | VK2NO | 158/- |
| 35. | VK8XC | 150/152 |
| 36. | VK4EMS | 150/- |
| 37. | VK6LC | 142/144 |
| 38. | VK4NJQ | 133/139 |
| 39. | VK4EZ | 129/138 |
| 40. | YB8GH | 127/129 |
| 41. | VK3VB | 126/128 |
| 42. | VK4CMY | 120/122 |
| 43. | VK7HV | 114/117 |
| 44. | SP1AFU | 114/115 |
| 45. | VK2FYM | 113/115 |
| 46. | VK3OZ | 104/105 |
| 47. | VK2AJE | 100/- |

Hoping you have a successful 1999,
best 73 de VK3DP

IONOSPHERIC UPDATE

Evan Jarman VK3ANI 34 Alandale Court Blackburn Victoria 3130

Solar activity

Solar activity during October was mostly at low levels with activity rising to moderate on only two days.

The three flares during the month occurred on these two days and ranged in intensity between class M1.6 and class M2.4.

November solar activity was higher but dipped in the middle of the month.

While the count of flares, class M1 or stronger, was 23, there were none between 12 November and 22 November.

It was due to an active region that declined as it passed round the west limb the reappeared on the east limb around 24 November producing the class X3.3 flare on 28 November.

Ionospheric activity

Ionospheric conditions were generally at low levels throughout the quarter. Depressions followed geomagnetic activity.

The only indication of better than average conditions was mid-October in Darwin where MUFs were enhanced by 40%. In other locations throughout the quarter MUFs could be depressed by up to the same percentage.

Geomagnetic activity

The greatest geomagnetic activity occurred during the first two months of the quarter. On 2-3 October the activity is believed to be due to a coronal mass ejection associated with the 30 September

class M2.8 flare mentioned in last quarter's *Ionospheric Update*. A coronal hole is believed to be the cause of the activity on 21-22 October. All major variations in geomagnetic activity in November were Coronal Mass Ejection related.

Solar cycle 23 progress

Now shown in the solar cycle graph is the monthly count of flares: class M1 or stronger.

While most of the observations have been during the minimum between solar cycles, there is enough information to show that flare activity is expected to rise with the rise in the sunspot number.

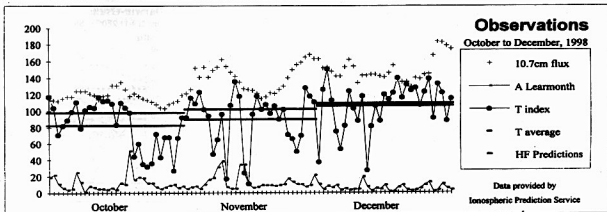
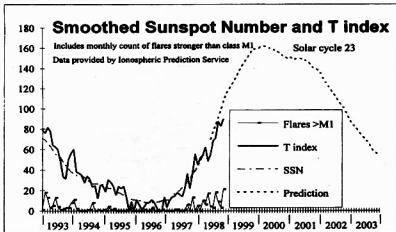
Last year, the greatest number of flares counted was in November but August had some more intense class X flares so was a more active month.

The Ionospheric Prediction Service compares the current flare counts with those of previous solar cycles to get a progress guide on the current solar cycle.

In a commentary published late last year they state that:

"flare production this cycle has been quite modest compared with previous cycles. As we reach the peak of the new solar cycle we can expect months during which there are a great many more flares than in August. Data for previous cycles shows several months in which there were around 90 M class flares (and presumably quite a few X class ones as well). This means that there was an average of 3, M-class flares every day; and probably some days during those months were way above average! So solar cycle 23 is only now starting to kick into action. We can expect much more as the cycle progresses."

ar



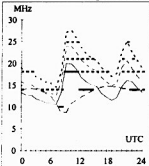
HF PREDICTIONS

by Evan Jarman VK3ANI 34 Alandale Court, Blackburn Vic 3130

Adelaide-London

132

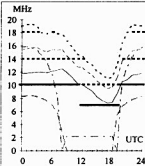
First F 0-5 Long 23755 km



Brisbane-Christchurch

141

Second 2F19-26 2E5 Short 2518 km



February

1999

T index: 109

Legend

UD

F-MUF

E-MUF

OWF

ΔLE

10%-30%

30%-90%

90%-100%

Frequency scale

Time scale

These graphs show the predicted diurnal variation of key frequencies for the nominated circuits. These frequencies as identified in the legend are:-

- Upper Decile (F-layer)
- F-layer Maximum Useable Frequency
- E-layer Maximum Useable Frequency
- Optimum Working Frequency (F-layer)
- Absorption Limiting Frequency (D region)

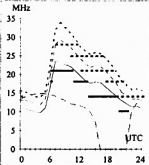
Shown hourly are the highest frequency amateur bands in ranges between these key frequencies; when useable. The path, propagation mode and Australian terminal bearing are also given for each circuit.

These predictions were made with the Ionospheric Prediction Service program: ASAPS version 4.

Adelaide-London

312

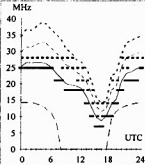
First F 0-5 Short 16269 km



Brisbane-Honolulu

49

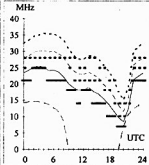
Second 3F5-11 3E0 Short 7569 km



Canberra-Tokyo

352

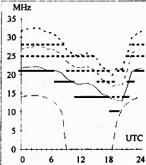
Second 3F4-10 3E0 Short 7948 km



Darwin-Auckland

130

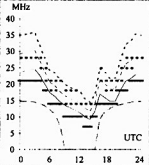
First 2E5-9 2E0 Short 5136 km



Adelaide-Los Angeles

66

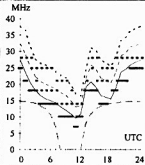
First F 0-5 Short 13159 km



Brisbane-Miami

79

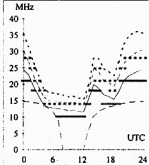
First F 0-5 Short 14761 km



Canberra-Washington

70

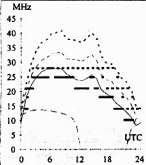
First F 0-5 Short 15938 km



Darwin-New Delhi

309

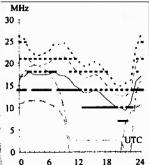
Second 3F6-13 3E0 Short 7345 km



Adelaide-Manila

338

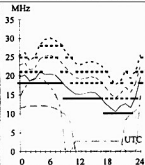
Second 3F10-19 3E1 Short 5813 km



Brisbane-Singapore

293

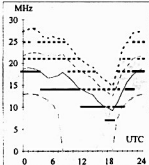
Second 3F9-16 3E0 Short 6146 km



Canberra-Wellington

115

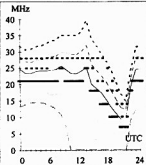
Second 2F21-28 2E6 Short 2342 km



Darwin-Osaka

5

First 2F4-11 2E0 Short 5262 km

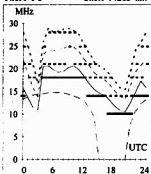


HF PREDICTIONS

Hobart-Cairo

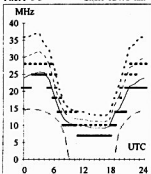
270

First F 0-5 Short 14263 km


Melbourne-Achorage

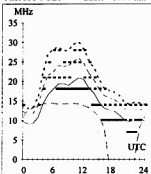
28

First F 0-5 Short 12473 km


Perth-Capetown

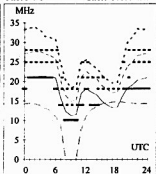
237

First 3F3-9 3E0 Short 8704 km


Sydney-Barbados

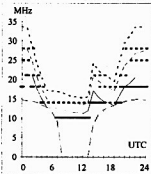
119

First F 0-5 Short 16155 km


Hobart-Chicago

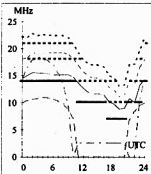
72

First F 0-5 Short 15576 km


Melbourne-Jakarta

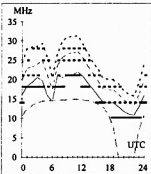
303

Second 3F12-19 3E2 Short 5214 km


Perth-Dakar

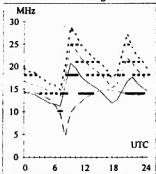
259

First F 0-5 Short 14918 km


Sydney-London

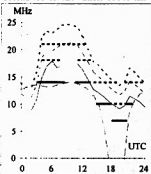
139

First F 0-5 Long 23032 km


Hobart-Johannesburg

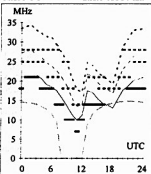
231

Second 4F5-13 4E0 Short 10141 km


Melbourne-Miami

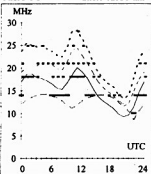
94

First F 0-5 Short 15584 km


Perth-Montevideo

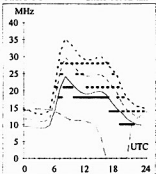
187

First F 0-5 Short 12536 km


Sydney-London

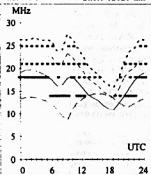
319

First F 0-5 Short 16992 km


Hobart-Rio de Janeiro

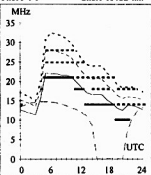
169

First F 0-5 Short 12620 km


Melbourne-Sofia

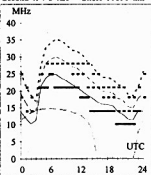
296

First F 0-5 Short 15132 km


Perth-Tel Aviv

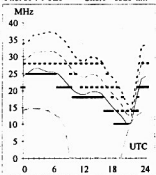
302

Second 4F4-8 4E0 Short 11091 km


Sydney-Seoul

340

First 3F4-9 3E0 Short 8325 km



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- Hamads may be submitted on the form on the reverse of your current Amateur Radio address flysheet. Please print carefully, especially where case or numerals are critical.
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FOR SALE ACT

• On behalf VK2EWK Kenwood TS130SE TCVR. 2071241. DFC230 104137. Kenwood antenna tuner AT200 950546. YAESU FP107E power supply with speaker. Chimside CS5EE five band vertical antenna. Kenwood MC60 desk mike. \$1150 ONO. Prefer self complete. Eric VK1EP 02 62496907

FOR SALE NSW

• One Terlin Outbacker mobile antenna, with heavy duty spring base...bought late 1997 for two special outback trips...now surplus to requirements...covers all HF bands (inc 160m)...is a "split" version...basically as new...cost\$550...sell\$400. Ph. Sid VK2SW QTHR 02 69226082

• ICOM IC-20H 2M/70cm all mode base station/ satellite rig in new condition \$1900. YAESU FT757GXII HF Transceiver \$750 EC. FT-290RII 2M all mode Transceiver and FL2025 matching 25W linear \$650 new! IC202 2M/SSB portable \$150. FT690 6M all mode plus matching FL6010 10W linear \$400. Phone Brad 0412651782 VK2ZBD

• Back issues of Amateur Radio Magazines from 1984 to 1998. Ex condition \$20, you pay post. Ken VK2CWI 0244761805 Narooma NSW

• AWA Type AT21 Xmitter circa 1942 g/cond complete with h/bbooks power supply and cables. Offers to Alex 0265837095 Villa 3/8 Woods st. Port Macquarie N.S.W 2444. VK2DV New QTH.

• ICOM handhelds 2M IC-2A and IC-02A Both good order and have BP7 batteries in reasonable condition \$100 each. David VK2BDT 02 48215036

• Kenpro KR500 elevation rotator, with controller, mast clamps, brand new unused \$300. YAESU elevation Azimuth controller G-5400B SN 4G010000 Plus elevation and Azimuth rotator assembly cw boom, mast clamps also 2M and 70cm crossed Y antennas, switched polarisation \$1200. Peter VK2APP 0263826086

• YAESU FT-1000 deluxe HF TX/RX, 200W output s/no OL100242, fitted with BPF unit, CW filter and I update chip. Also included, MD-1C8 Dynamic Base microphone, SP-5 external speaker all manuals and cables. Purchased mid 1996 from deceased estate used twice since then. Unit in excellent to mint condition, also service manual for FT-1000 which was purchased separately. Valued at over \$6000, sell for \$5100, ONO. Also, Icom IC-275A, Base station rig AC or DC operation. Excellent condition with all accessories, never used, sell for \$1150. Contact Steve on (H) 02 43347743 or (m) 0419 602 520

• Triband Beam (copy of Tet 14/21/28) dismantled on ground approx 25 kg \$180 or offer.
 • Siemens Teleprinter good order give away free Roger VK2AIV QTHR (02) 4234 1431

WANTED NSW.

• Old unloved relics of the valve age, after communication receivers or military equipment. I am quite willing to accept busted or junked sets, or even working sets! Will pay \$5 if necessary. A monitoring/museum is being set up at Ermington, in Sydney's mid west. A real labour of love.

The heavier the better, no one has given me a hernia yet. Will help clean out the shack, call John (02) 9533 6261 WIA L21068.

• Philips FM-828 E Band 68-88 MHz transceivers for rescue squad. Contact Maurie Camps VK2DCD Box 72 Coleambally NSW 2707 014 438 215

FOR SALE VIC

• Azden 2m mobile plus desk mike for base use. EC Remote, Head SN12089 5-25W \$250. Icom HH 2GAT 20MEM 2 Batteries Speaker Mike. 12 volt adapter charger door mount EC SN30909 \$ 250 Both radios with manuals and schematics. Werner Wulf 5 band vertical ground plane in 2 sections. Never used \$100. CW Key Hi Mould. Model HK708, new \$25. CW Morse Trainer Oscillator \$10. QTHR VK3LPM Ron 53689477

• Wilson 4 element tribander, YAGI 10,15,20m \$250. Tokyo Hy-Power HF Allband 2kw Antenna Coupler, Vernier Drives, \$450. VK3OK 98022541

• Kenwood TS-680S HF & 6metre XCVR. Very good condition. Original box etc \$825. Barlow Wadley XCR-30 All Band Receiver. Very good order. Instr box \$150. Kenwood TS-430S HF XCVR. AM,SSB & CW Filters. Excellent condition \$775. Ron VK3OM. QTHR Ph. 03 59443019

• General purpose noise remover and filter model WRF-7, \$75. Mr A Chandler, VK3LC 55 Jacana Dve Carrum Downs 3201

• Wilson (USA) 4 element Yagi tribander, 10 15, 20, 2m, works well \$250. Tokyo Hy-Power ATU 2kw PEP \$450. YAESU FC107 ATU \$180. VK3OK 0398022541

• Deceased estate Neil Hatfield VK3PBI All excellent order. Complete mks. manuals orig packing boxes Kenwood station monitor SM220 \$200 TS130V \$350. TS520S \$350 SP100 \$35. AT200 \$125 SP520 \$35 TS680S \$850 YAESU FT26 \$175. FT212RH \$250. Digitor C1509 mic \$35. Nally 13.7M tilt-over self-supporting tower with Archer rotator and 3EL YAGI. Purchaser to dismantle and remove \$500 Harvey VK3AHU QTHR 03 5798 1451.

• Kenwood TS 711 all mode 2mx transceiver. EC, with manual \$600. Kenwood TS50 100W HF transceiver and same sized switched mode power supply. MC 80 desk mic and manuals \$995. KLM KT34A linear loaded 20/15/10 beam. EC with cables \$500. HD EMOTATOR rotator for above beam, with controller & approx 100ft cable. EC \$200. MFEJ 815B Deluxe SWR/PWR meter \$150. WAVETEK Model 3006 100Hz-520MHz professional sig gen \$850. AIRMEC valve type sig gen Type 201A. 30kHz-30MHz \$100. GOODWILL Type GOS955 5MHz CRO \$75. Weiler solder station WCTPC Brand new. Cost \$195 Sell \$135. 40amp 13.6v very heavy duty regulated power supply \$150. Harold VK3AFQ QTHR Ph 03 95962414

• Tower 46ft three sections, pivots 16ft properly engineered \$950. Kenwood TS 440SAT (8050454) service manual \$150 Kenwood TS130-V (1033315) with TL-120 linear

(2010130) \$300. P.S. 50 (0100523) \$200. Trio sig. gen SR402 30 MHz (5040171) \$100 LODESTAR LAB.PS 5A 501671) \$50. LODESTAR 'scope 05 7300A 5MHz (504088) \$100. National SSB TXCVR model RJX1011D (261220) B) Suber performer, suit newcomer \$300. TEN-TEC dummy load model 209 300W \$20. Noise bridge EMTRON (EN 283) \$40 QTHR Murray VK3ECI (03) 51567789

● **FT290R S/N5G450020** trevr 2m \$350. Valves 6146B GEC \$50. 12BY7 \$25. 572B \$100. CETRONS many other types of valves 2m vertical "DINGO" \$25. 14el 2m Beam \$55. Linear amp FL2100B S/N 9K340227 \$750. 2m Lin. amp HL35V S/N 470263 VARIAC 1500W \$200. COAX. Harry Lodder VK3AXJ 3 Muir St Mount Waverley (03)98025704 QTHR

● **Datong D-70 Morse Tutor**, in EC; \$175 ONO. 30m LDF4-50A Heliax, fitted with 2 female N connectors; \$250 ONO. Barry, VK3BJM, (03) 9888 0000.

● **Kenwood SSB transceivers TS-520 + TS-520S** C/W crystals. Kenwood 2m transceiver. Type 241A still in box. Palec multimeters assorted electron tubes MFJ antenna switch MFJ 1700B MFJ deluxie versa tuner and freq counter 2m mast + coax, sundry capacitors-resistor antennas. J N Blake VK3DPB 7 Josephine st, Oak Park 3046.

WANTED VIC

● **Kenwood TS 790H, ICOM IC 970H** or IC 820H. Please contact Horst VK3GDK QTHR 03 52753293

FOR SALE QLD

● **6METRE FM TRANSCIVER; TAIT T499**. 25 watts. 100 channel capacity programmed with ALL repeater, simplex & reverse repeater frequencies. CTCSS encoder, Mic, Spkr, cradle, circuits, CH list. GC. \$110. SIGNAL GENERATOR Marconi TF2015. 10MHz to 520MHz. AM/FM. Compact size. 240VAC. GC \$350. MODULATION METER; RACAL DANA 9008M. AM/FM. 8 ranges. AF filters. up to 2000 MHz. 240VAC. GC, \$110. Gary, VK4AR, 07 3353 1695

● **Kenwood TS440SAT, MB-430** Mobile Bracket MC43S scanning hand microphone, DC lead, owners manual, original carton \$1100. Kenwood TS140S, MC43S, DC lead, owners manual \$850. Kenwood TM241A 50 watts output 2metre FM 118-174 MHz RZ, owners manual \$300. All excellent. All items must be sold! John Abbott VK4SKY QTHR 24hrs. 0417 410503

● **Kenwood TS430S HF-xcvr.** incl. Service Manual \$730 - ONO Kenwood TS440S HF-xcvr incl Service Manual and built-in AT \$970 ONO Kenwood CW-Crystal Filter YK-88C \$85 ONO Daiwa Automatic Antenna Tuner Model CNA-1001 \$150 ONO Longwave Antenna 80-20 Metres \$115 ONO Sansel Mini SWR-meter Model SE-406; 1.8 - 200MHz \$55 ONOVK4ASN Tel 07 3207 2050

● **Antenna TE-33 YAGI beam 10,15,20 metre** \$225. Microsoft Internet starter kit for Windows \$20. Encyclopaedia Britannica CD '98 set of 2 CDs \$1100. Encyclopaedia Britannica CD '97 \$50. Dick VK4DIC ph. 07 3264 1655

● **4-1000A (etc) valve socket type SK510-S** Deluxe air system type imported from USA new unused. One pair available \$140 pair or will separate \$75 each. Coaxial relay 24 volt "N" connectors DPST precision preamplifier isolation relay new unused \$40. John VK4KK QTHR 07 3269 6647

WANTED QLD

● **Kenwood DG-5 digital display.** Len VK4JZ QTHR (07) 5485 3324

● **AM17 VHF Transmitter ex. DCA Ray** VK4BLK QTHR 07 49392284

● **Hewlett Packard Model 141B Oscilloscope** operation and service manuals; Any other info for this model; Any after-market company able to supply manuals for this model. Geoff VK4ZGF QTHR 0741221368 A/H PO Box 210 Maryborough QLD 4650

● **Any RF bandswitches and squirrel cage** blowers that may suit a linear amplifier. Ron VK4BL QTHR or vk4bl@tpgi.com.au or 07 4055 0230

● **Manual/book for YAESU FT-411E** 2metre hand held. Allan VK4NBZ PO Box 1779 Cairns QLD 4870 (H) 07 40392876

● **Toshiba laptop T3200 for parts** or the 1.44 FFD and Manual Allan VK4NBZ (H) 07 40392876

FOR SALE SA

● **Antenna triband 20-15-10, Model Com-Antenna.** Tropless beam near new. This is a five element beam. See Radio & Communications Dec'98 Price \$320. Linear amp pair 572Bs 400W. Price \$400. Phone Con 08 95745112

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Systems Noise Bridge S/NO 08202 \$20. KW Electronics KW2000 transceiver S/N0 B1180 C/W EXTERNAL PSU. Collector's item - what offers? Contact Betty (08) 8248 2472 or Ian VK5QX (08) 8250 1708

WANTED SA

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● **915 kHz IF Ts** or may be passed to 915 kHz. required for modification to BC348 valve receiver - Rob VK5RG QTHR 08 83791889

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● **YAESU FT990 top line HF T/ciever Auto/A+U** P/supply as new. G/coverage Receive YAESU SP5 ext Spkr inc filters ex YAESU Phone H.F. T/ciever inc p/supply Gen Cov Receiver EC Daiwa CNW 217 HF ATU 160-10 All with boxes manual phones Allen VK7AN 0363271171 0417 354410 QTHR.

● **YAESU FT50RD hand held** 144MHz-70cm xcvr# with FND42 power pack Little used still in warranty 18 months \$450. Braioner 144cm 70cm vertical GST3 antenna \$195 Neville VK7NC QTHR 03 62251304

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● AMIDON FERROMAGNETIC CORES:

For all RF applications. Send business size SASE for data/picture to RJ & US Imports, PO Box 431, Kiama NSW 2533 (no enquiries at office please ... 14 Boany Ave Kiama). Agencies at: Assoc TV Service, Hobart; Truscotts Electronic World, Melbourne and Mildura; Alpha Tango Products, Perth; Haven Electronics, Nowra; and WIA Equipment Supplies, Adelaide.

● **WEATHER FAX programs** for IBM XT/ATs *** "RADFAX" \$35.00, is a high resolution short-wave weather fax, Morse and RTTY receiving program. Suitable for CGA, EGA, VGA and Hercules cards (state which). Needs SSB HF radio and RADFAX decoder. *** "SATFAX" \$45.00, is a NOAA, Meteor and GMS weather satellite picture receiving program. Needs EGA or VGA & WEATHER FAX PC card, +137 MHz Receiver. *** "MAXISAT" \$75.00 is similar to SATFAX but needs 2 MB of expanded memory (EMS 3.6 or 4.0) and 1024 x 768 SVGA card. All programs are on 5.25" or 3.5" disks (state which) plus documentation, add \$3.00 postage. Only from M. Delahunty, 42 Villers St, New Farm QLD 4005. Ph 07 358 2785.

WIA Division Directory

The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

| Division | Address Officers | News Broadcasts | Note: All times are local. All frequencies MHz. | Fees |
|---|--|----------------------------|--|---|
| VK1 ACT Division GPO Box 600 Canberra ACT 2601 | President Hugh Blemings Secretary John Woolner Treasurer Les Davey | VK1YYZ VK1ET VK1LD | 3,590, 146,950, 438,375, 438,325, 438,225 & 438,025 FM each Sunday from 8.00pm AEST. News text: on packet BCAST@VK1BBS, http://www.vk1.wia.ampr.org & aus.radio.amateur.misc newsgroup. Send items by packet as personal message BCAST@VK1BBS or e-mail to broadcast@vk1.wia.ampr.org. | (F) \$72.00 (G) (S) \$58.00 (X) \$44.00 |
| VK2 NSW Division 109 Wigram St Parramatta NSW (PO Box 1066 Parramatta 2124) Phone 02 9689 2417 Freecall 1800 817 644 Fax 02 9633 1525 | President Michael Corbin Secretary Eric Fossey Treasurer Eric Van De Weyer (Office hours Mon-Fri 11.00-14.00) Web: http://ozemail.com.au/~vk2w/ e-mail: vk2w@ozemail.com.au Packet BBS: VK2WI on 144.850 MHz | VK2YC VK2EFY VK2KUR | From VK2WI 1,845, 3,595, 7,146*, 10,125, 14,170, 24,950, 28,320, 29,120, 52,120, 52,525, 144,150, 147,000, 438,525, 1273.500 (* morning only) with relays to some of 18,120, 21,170, 581,750 ATV sound. Many country regions relay on 2 m or 70 cm repeaters. Sunday 1000 and 1930. Highlights included in VK2AWX Newcast news, Monday 1930 on 3.593 plus 10 m, 2 m, 70 cm, 23 cm. The broadcast text is available on the Internet newsgroup aus.radio.amateur.misc , and on packet radio. | (F) \$69.00 (G) (S) \$56.00 (X) \$41.00 |
| VK3 Victorian Division 40G Victory Boulevard Ashburton VIC 3147 Phone 03 9885 9261 Fax 03 9885 9298 | President Jim Linton Secretary Barry Wilton Treasurer Rob Hailey (Office hours Tue & Thur 0830-1530) e-mail: vk3w@rlnt.com.au Web: http://www.tbsa.com.au/~wlaiv/ | VK3PC VK3XV VK3NC | VK3BWI broadcasts on the 1st Sunday of the month, starts 10.30 am. Primary frequencies, 3,615 LSB, 7,085 LSB, and FM(R)s VK3RML 146,700, VK3RMM 147,250, VK3RWG 147,225, and 70 cm FM(R)s VK3ROU 438,225, and VK3RMU 438,075. Major news under call VK3WI on Victorian packet BBS and WIA VIC Web Site. | (F) \$75.00 (G) (S) \$61.00 (X) \$47.00 |
| VK4 Queensland Division GPO Box 638 Brisbane QLD 4001 Phone 07 3221 9377 | President Colin Gladstone Secretary Peter Harding Treasurer Alistair Elnick e-mail: secretary@wiaq.powerup.com.au Web: http://www.wiaq.powerup.com.au | VK4ACG VK4JPH VK4FTL | 1,825 MHz SSB, 3,605 MHz SSB, 7,118 MHz SSB, 14,342 MHz SSB, 21,175 MHz, 29,400 MHz SSB, 29,220 MHz FM, 53,725 MHz FM, 147,000 MHz FM, 438,500 MHz (Brisbane only), and regional VHF/UHF repeaters at 0900 hrs EAST Sunday. Repeated on 3,605 MHz SSB & 147,000 MHz FM at 1930 hrs EAST Monday. Broadcast news in text form on packet under WIAQ@VKNET. | (F) \$74.00 (G) (S) \$60.00 (X) \$46.00 |
| VK5 South Australian Division 34 West Thebarton Rd Thebarton SA 5031 (GPO Box 1234 Adelaide SA 5001) Phone 08 8352 3428 Fax 08 8264 0463 | President Ian Hunt Secretary Merv Miller Treasurer Joe Burford Web: http://www.vk5wia.ampr.org/ | VK5QX VK5MX VK5UJ | 1827 kHz AM, 3,550 MHz LSB, 7,095 AM, 14,175 USB, 28,470 USB, 53,100 FM, 147,000 FM Adelaide, 146,700 FM Mid North, 146,800 FM Mildura, 146,825 FM Barossa Valley, 146,900 FM South East, 146,925 FM Central North, 147,825 FM Gawler, 438,425 FM Barossa Valley, 438,475 FM Adelaide North, 438,475 FM Adelaide, (NT) 3,555 USB, 7,065 USB, 10,125 USB, 146,700 FM, 0900 hrs Sunday, 3,585 MHz and 146,675 MHz FM Adelaide, 1930 hrs Monday. | (F) \$75.00 (G) (S) \$61.00 (X) \$47.00 |
| VK6 West Australian Division PO Box 10 West Perth WA 6872 Phone 08 9351 8873 | President Cliff Bastin Secretary Christine Bastin Treasurer Bruce Hedland-Thomas Web: http://www.faroc.com.au/~vk6wia/ e-mail: vk6wia@faroc.com.au | VK6LZ VK6ZLZ VK6OO | 146,700 FM(R), 438,525 FM(R), 29,120 FM at 0930 and 1900 hrs Sundays from Perth, relayed (morning only) on 1,865, 3,564, 3,582 (Busseton), 7,075, 14,116 (North), 14,175 (East), 21,185, 50,150: (morning and evening) 146,900(R) Mt William (Bunbury), 147,00(R) Katanning, 147,200(R) Catalpa, 147,250(R) Mt Saddleback (Boddington), and 147,350(R) Busseton; (evening only) 1,865, 3,564 MHz. | (F) \$62.00 (G) (S) \$50.00 (X) \$34.00 |
| VK7 Tasmanian Division 24 Targett Street Scamander TAS 7250 Phone 03 6372 5305 | President Ron Churcher Secretary Paul Godden Treasurer John Klop Web: http://www.wia.tasnet.net e-mail: vk7kpg@hamnet.hotnet.com.au | VK7RN VK7KPG VK7KCC | 146,700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147,000 (VK7RAA), 146,725 (VK7RNE), 146,625 (VK7RMD), 3,570, 7,090, 14,130, 52,100, 144,150 (Hobart), repeated Tues 3,590 at 1930 hrs. | (F) \$74.00 (G) (S) \$60.00 (X) \$46.00 |
| VK8 Northern Territory (part of the VK5 Division and relays broadcasts from VK5 as shown, received on 14 or 28 MHz). | | | | |

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So when Yaesu says "Dick Tracy, we're waiting for your call" you can be sure they have good reason to do so. In fact, call into your Dick Smith Electronics' Hams Shack store for a demo of this fun new rig. Or phone 1300 366 644 for a copy of the Yaesu colour brochure.

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